

THE NEW WINDMILL SERIES
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THE INSECT MAN



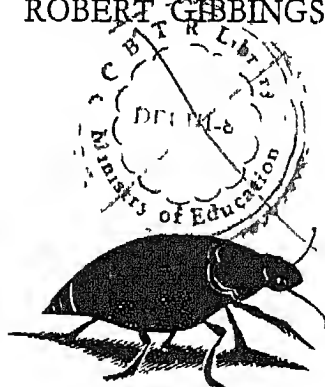
THE INSECT MAN

*A tale of how the Yew Tree children went to France to
hear the story of Jean Henri Fabre in the places
where he lived and to see the homes of
some of the insects whose life-
story he has written*

by ELEANOR DOORLY

Introduction by
WALTER DE LA MARE

and Woodcuts by
ROBERT GIBBINGS



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To
Marjorie Countess of Warwick



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AUTHOR'S NOTE

I HAVE known boys and girls of any of the ages who have liked tales of real people better than any other tales. I have known others who would listen to tales of insects as long as the teller had tales to tell. I have thought therefore that the same people might like to read the story of Fabre and his insects at a younger age than that to which either the charming translations published by Messrs. Hodder & Stoughton, or the wonderful French original, appeal.

I should like to express my gratitude to the above firm for their permission to re-tell some of these tales. I also thank Fabre's nephew and namesake and M. Jouve for the tales of the Naturalist which they told me at Avignon and Carpentras.

As to the form of the tale—a journey undertaken by children to the scenes of Fabre's life—the journey actually happened, but the travellers were only two and older.

This book is scarcely mine. I can only say I hope I have not spoilt it—this little book with a welcome from Walter de la Mare, with tales from Fabre and with Robert Gibbings' lovely woodcuts.

WARWICK, 1936.

ACKNOWLEDGMENTS

For the use of extracts from copyright poems I have to thank —

Mr Walter de la Mare

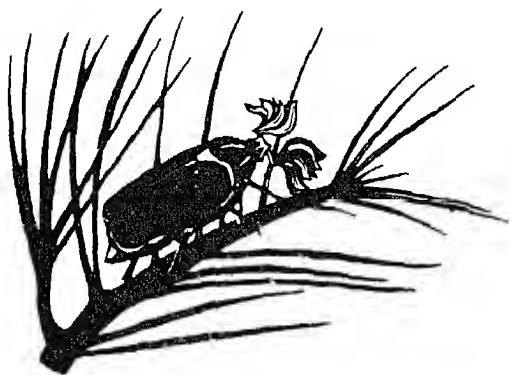
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My debt to Messrs Hodder & Stoughton, Ltd., for the
right to re-tell Fabre's tales has been also acknowledged
in the preface.



INTRODUCTION

THIS is a book intended for young and lively-minded children—which implies, as I believe, that it might win a larger number of readers in proportion to the host available than if it were intended solely for intelligent adults. But there is no more precarious merchandise than books. What we most need and pine for in this we *may*, by ill chance, easily fail to come across. This is particularly likely to happen when we are young—and it is a disaster. *The Insect Man* is also a book of an unusual kind and quality—a statement which suggests that I am familiar with every kind of children's book. But of course one can only speak from one's own experience. Unlike, at any rate, numerous books aimed at children, this one clearly was not written either at or *down* to anybody, but straightforwardly. Its purpose is flawless—that of sharing an intense interest and delight in a man of extraordinary character and of an astonishing zeal which burned on in him undimmed throughout a lifetime ninety-two years long. After reading these pages—or hearing them read—a child of any imagination will have vividly shared his strange company, the villages, houses and very rooms in which he lived his simple and devoted life, and will have won to something at least of his inmost self and spirit.

A good *school* book clearly and concisely imparts knowledge and information—a process not necessarily so petrifying as it sounds. That information may be invaluable. “What matters in learning,” however, and this is Fabre’s sovereign wisdom, “is not to be taught, but to wake up.” *The Insect Man* also imparts invaluable information, but in the process it should unquestionably wake any reader up; since it reveals a love and joy in acquiring knowledge (and that as it happens of an outlandish and unbelievably romantic order), which even the youngest of children may have in a fountain-like abundance—as his incessant rain of questions proves—until, alas, perhaps, he goes to school.

Here the fact that Penelope, who is the informer, is called Penèl for love and brevity by Giles and Geraldine is one small proof that she is no mere preceptress. Nor are the children who share her pilgrimage to the tropical, arid, fascinating Fabre country in the least degree “childish”. They talk good English, and good sense, at times tinged with the imaginative. And their company is an unfailing delight.

As for the Insect Man and his ineffable “little beasts” and his childhood and his poverty and his obsession and his triumph and his devotions and hatreds, there is enough of all this here to reveal what riches are awaiting those who care to follow Miss Eleanor Doorly’s enticing lead—with the list on page 173 to help them.

Fabre was of course not by any means the first observer of the insect universe. As far back, indeed, as 1835, when he himself was twelve years old, Emily Shore, for but one example, as a girl of fifteen was not only in her own bedroom keeping steadfast watch for hours at a stretch on a no less intensely industrious mason-wasp (*Odynerus mucarius*), but recording its wayfarings in her Journal. And recently the appalling economy of the dark-devoted termites has been exposed. Most such books, those for instance on the honey bee, are placid and pleasing. And, in general, all "scientific facts" should be welcomed with a vigilant and quiet interest. "Appalling" therefore is a word wholly out of keeping. Nevertheless Fabre introduces us not only into the insect world itself, a universe almost as aloof from Man's as that of an inhabitant of Aldebaran and one (as Mr. H. G. Wells has demonstrated in *The Food of the Gods*) which only mere human size has precluded apparently from effecting his final eclipse, but also, as it seems to me, into a unique region of human fantasy. One's astounded intelligence can scarcely credit, much less attempt to explain—or to justify!—the habits of some of these creatures of Fabre's fanatical interest. Nothing, for example, created by man's imagination has exceeded in blind effortless ingenuity the fly's grub that is destined to prey on the bee's grub, or in horror the activities of the tarantula or of the scorpion or (and this even in mere looks

alone) of the praying mantis. These utterly "impossible she's"! What, on the other hand, of the sheer marvel of the secret invocation to her suitors (as it is recorded on page 167) from that few-hours-old enchantress, a female Great Peacock moth: "I cloister her at once, damp with the moistures of her birth under a wire-net bell"? Or of the banded minim butterfly, bought by Fabre for two sous from his potato boy. Indeed, the infatuation of these exquisite creatures, which have not even an apparatus for digesting food, just perish for and "in" love, and yet appear to be unaware of Helen herself in her man-made glass fortress—well, that sets us thinking about ourselves and our own little way of heart and mind with extreme dubiety if not positive confusion. In view of these and similar phenomena, "poor stupid Spider" is perhaps a perfectly rational and merited comment. And yet, no less clearly, reason here won't fit the case, and even intuition fails us. As might, say, a tarantula's in his attempt face to face to fathom the less attractive habits of mankind. For even an angel infancy may reveal at times the contrariest hints of a little beast.

WALTER DE LA MARE.

CHAPTER I

The Yew Tree Family who journeyed to find Fabre

THE children lived almost entirely under the Yew Tree. That was why everyone, who knew them, called them the Yew Tree Children. They had a house, but when they were in that there seemed always so many things to be done. There were so many rules to be observed, as, for instance, they could not speak outside their father's doors; so many clocks to watch in order to have their hands washed before they struck one, or four, or seven; so many useful occupations that were good for them, like dusting the schoolroom or learning to make soup. But the Yew Tree, though it was in sight of the house, was far enough away to be beyond call or convenient-fetching distance, and the children were left gloriously alone.

Also they liked the Yew Tree for itself. It was very old—nine hundred years old, tradition said—and its trunk was wide, with hiding-places in it, while its branches were low and easy to climb. Moreover, the children found it amusing to watch all the strange tourists who made their way there to visit the tiny church where Jane Austen, the writer, was christened. Once someone had hidden the church key in one of the tree's caverns, and from that time it had been the custom to keep it there. The children told the

visitors that they were the sole and appointed guardians of the key, and didn't explain that they had made the appointment themselves. But the key itself was uncommon and exciting, for it was a foot-and-a-half long, and yet difficult to find, so deep was its hiding-place.

The children were Geraldine, her brother Giles, and Margaret, who was only a friend. Their mother had been dead since Geraldine could remember, and their grown-up step-sister, Penelope, brought them up—very badly in the opinion of everybody but themselves.

Their village was different from other people's villages, because everyone in it, including their father, was writing a life of Jane Austen. That made the children, who liked true stories of real people, want to make a collection of lives of the people who were different from Jane, in order to tease their father, who thought that there was "nobody like Jane." Penelope did most of the collecting. The others generally listened to her and made improvements in the stories as she told them under the Yew Tree. When, by chance, she wrote them down, they granted her the special privilege of leaving out all her inverted commas for her own speeches, and that explains the absence of some of them in this story.

CHAPTER II

How the Quest Began

"Who would understand a poet and a poet's work, must go to a poet's land."—GOETHE.

ON the day when they first thought of the life of the Insect Man it was hot summer under the Yew Tree, in spite of the primroses by the old church wall and the first white violets in the grass. Geraldine was alone with her French governess and feeling very hot, because she was angry and naughty and it was summer. But Mademoiselle, happening to glance down at the flowers, and feeling that they were supporting *her* opinion that it was merely a sunny March day in a cold English spring, drew her fur coat closer round her and grew angrier with the bare-armed, bare-headed, cotton-frocked person on the other side of the table.

She had lost one battle that morning about lessons over the fire in the comfortable school-room and now she was in a fair way to lose another. "Never let a child win a skirmish," she registered mentally for the hundred and first time, while her fur bristled irritably against the cotton opposite. There was something definitely wrong with cotton; there was so little of it—just a little blue, like the sky—tipped by that wisp of a face, two blue eyes, which recalled the cotton and a

golden wave above, like a sunny cloud; and the whole so naughty, so stiff, so unbendable!

Mademoiselle had tried everything, everything short of yielding, of allowing Geraldine to alter the words of the fable which she had been told to learn. Mademoiselle suspected her of knowing the thing quite well, of being therefore merely naughty in changing the title of La Fontaine's famous fable, "The Grasshopper and the Ant." She had repeated it in English docilely enough with her own pleasant little rhythmic swing, in an English that sounded unfamiliar and almost as if she had put it into verse herself:

The grasshopper who sung
All the summer through
By bitter want was stung
When the stark wind blew.

Not a bit of fly
Nor scrap of little worm
To put into her pie!
Hunger held her firm.

Then to the ant she turned
To beg a grain or two.
"I'll pay back when I've earned—
Capital and interest too "

The ant no lender she!
"What did you 'neath the Sun?"
"I sang!" "Oh! Deane, me!"
"Now dance, till dinner you've won "

But when it came to the French: "La sauterelle
ayant chanté" began Geraldine over and over

again, and Mademoiselle, with that low correcting voice of hers: "No! Geraldine. *La cigale* ayant chanté."

A pause, and then Geraldine again: "La sauterelle ayant . . ."

"La cigale is *not* la sauterelle" stamped Mademoiselle at the end of her patience.

"No," said Geraldine darkly, "I know."

"Then why don't you say what La Fontaine wrote?" "Because he made a silly mistake."

Mademoiselle's face was a delightful study for the scrap in cotton, though she probably did not quite understand the French woman's deep, awed conviction of the perfect rightness of the great fabulist. For a French woman there are no mistakes in La Fontaine's fables.

Conversation between the two ceased to be possible and no one knows what would have happened, or if this tale ever would have been written, if Penelope had not appeared suddenly with her basket of daffodils from the rhododendron path.

"Ah! Miss Penelope," cried Mademoiselle, "This Child! this morning! She is *insupportable*! She says La Fontaine made a mistake! I know not what is in her head, but La Fontaine! a mistake!"

Penelope took the third chair, resting her slender clasped fingers on her basket's high handle, while a little slow smile crept first into her blue eyes and then caught her long, curving,

kind lips. Behind Penelope's smile there was such a long, long tale, a tale thousands of years old, that caused the smile, as she thought of how French La Fontaine was mixed up in it, and the old Greek Æsop and the tale-tellers of ancient India and the Insect Man; especially the Insect Man! And now her little step-sister was in it, who had taken up the cudgels last night on behalf of the cigale, which was only a grasshopper, and was fighting her governess this morning, because she would not have the cigale's character blackened by any poet however great; and Mademoiselle was in it, whose reverence for La Fontaine was almost religious. Penelope knew all about it, because she had heard her father, who liked doing Geraldine's prep. with her, telling her the story as a reward for making a rhymed translation of the fable. But between the necessity of upholding governesses and the equal necessity of taking sides with her sister who happened to be in the right, she was in a quandary.

Geraldine, she said, those two old ladies will never find that key unless you get it for them. When you come back, you can tell Mademoiselle what your Insect Man says about the cigale and the ant, and if you tell it very well, I will tell you the perfectly new, lovely idea I have just thought of for our holiday.

Geraldine was back in the twinkling of an eye and with her gaze fixed on Penelope to see if she was content with the telling, she began, while

Penelope prayed silently that Mademoiselle would consent to listen:

*The Tale of the Cigale*¹

"A cigale is called a cicada in English and it is not a grasshopper.

"The Insect Man says that a long, long time ago, before there were any books, some wise man in India wanted to teach people to save their grain in harvest to be ready for the cold weather. So he told them a parable of a little singing beast, who starved in the winter because he had no savings, and could not borrow from the ant. And the little singing beast had no name in Europe, because he didn't live here and people have an awkward way of not giving names to things they have never seen, which makes translation very difficult. So Æsop, a Greek, who wanted to repeat the fable of the singing beast, and was careless about the right name, called him or her, a cicada. But any ploughman, who dug up the cicada's sleeping chrysalis in winter, could have told him what nonsense it was to think a cicada ever lived in the winter. La Fontaine just went on with Æsop's *mistake*. And the man who did the picture in La Fontaine's book, a man called Grandville, drew a grasshopper, a sauterelle, not a cicada at all. He drew the ant dressed up as a good housekeeper and the grasshopper bowing at her door beside great sacks of corn, with her

guitar under her arm and her thin frock clinging round her, blown by the cold wind.

"I don't know anything about a sauterelle, except that he is a big green grasshopper who lives in the more northern part of France where La Fontaine lived. But the little, dear, delicate cicada lives in the South where the Insect Man lived, and he is my special Insect Man. He had two plane trees opposite his house, under which he used to sit all day long, and watch, and watch, and watch the cicada and learn *all* about it, and this is what he saw: the cicada in the heat of the South, when everything is dried up and all the insects dying of thirst, just settles on a branch



of some shrub, pierces the bark and sucks the sap, singing the while. She doesn't sing with her mouth, but has a whole arrangement of cymbals to make music in her tail. While the Insect Man watched, he saw all kinds of thirsty insects come up to drink the drops that oozed out and overflowed from the hole the cicada had made: wasps, flies, beetles . . . but especially *ants*. He saw the littlest ones slip under the stomach of the cicada to get closer to the sap; and she, nice beast, just lifted herself up on her feet to make more room for the ants to drink easily. Fancy scandalising her after that! The bigger creatures took a sip; then flew away to try for something better and finding nothing, came back to try to drive the cicada away from the drink spring it had made.

"The Insect Man, whose name was Fabre, saw the miserable ants biting the cicada's feet to make her move. Some of them pulled her by the end of the wing, some climbed on her back and tickled her sensitive feelers; one even seized her sucker and tried to pull it out of the hole, till at last, bothered by the tiny beasts, the giant left the spring, and, flying to another plant, began the story all over again. The beggar, the robber, is the ant; the industrious worker who shares so sweetly with unfortunate people is the cicada.

"But there is a lot more than that wrong in the fable. The cicada never eats flies or worms or grain. She never eats at all, she only drinks. Then, too, she never lives into the winter at all.

She dies every year when it is still warm; and the Insect Man has seen the ants eating her thin, slim, dried-up body. So she is the ants' food in winter and their drink provider in summer. She can't live into the winter. She is alive about five summer weeks, that is all, just time enough to sing and to lay her eggs. Her eggs and her chrysalis live, in all, four years underground; four years in the dark for the sake of five weeks in the sunshine. No wonder, says the Insect Man, she sings all the days of the five weeks and makes a deafening shout about her joy at being alive."

"Now the holiday, Penél?"

As we are taking the car to France, don't you think it would be great fun to go to all the places where the Insect Man lived and write our own life of him as we go along?

"Not really? Not truly? Shall we really see the two plane trees themselves and the very cicadas or, anyway, their great great grand-children?"

Not too fast, Geraldine, remember that the cicada lives only five weeks in the summer and that this is not summer, but spring!

"There!" said Mademoiselle, with a despairing little grimace, "I told you so!" as the wisp of blue cotton danced away in the breeze singing: "We're off to the home of the Insect Man!"

"Stop!" called Giles to his sister, for he and Margaret had come up from the orchard with still more daffodils: "Come back and let us discuss this holiday! Before we decide on it, I think

Penelope ought to tell Margaret and me something about this Insect Man, so that we may know if he lived in places we should like to visit and whether he did anything really interesting to make his life worth writing."

He saw things that no one else had ever seen, said Penelope. Then, he put down what he saw and how he had seen it, so charmingly, in a great book, that you can open it anywhere and get a fascinating tale about little beasts. In that way he won two titles to fame: the one as a seer, or observer; the other as a writer.

He was just a little village boy who became a great scientist. He lived all his life among splendours: mountains, brilliant suns, medieval buildings as mighty as the palace of the popes at Avignon, Roman architecture as exquisitely fine as the triumphal arch at Orange. He lived among the spotless snows of high places and the tangled glory of the flowers of the South. He loved them all; but he chose for study some of the smallest living things, the insects.

He, like us, was always interested in little beasts, as Geraldine calls them; but, up to his time, learned students of insects, for the most part, only made collections of them and classified them. They knew, of course, how many legs they had and what shaped wings, but they had never thought of studying their characters.

"Their characters!" snorted Giles.

Yes, you have no idea what strange and some-

times awful characters insects have! What would you think of wives who *always* eat their husbands? But they have their virtues too and their startling skill. Fabre tells us that he was from the beginning interested in these strange splinters of life; but that one day he read an uncommon essay by a great student and that the effect was as if a spark had fallen into his mind and set it all alight. For the first time he realised that to collect insects in glass-topped boxes and to classify them under hard names was not the whole of insect science. There was something more: you could watch insects till you knew them, till they revealed to you their habits and tricks, their methods of doing things, their surgical skill, their reasons for their actions, their characters.

"Just give us an example of a tale, Penél," said Giles.

It is almost a shame to tell them to you, you should read them for yourselves in Fabre's own lovely language.

"Nevertheless, a tale! a tale! How else can we know if we want to hear anything more about the man?"

*The Tale of the Digger Wasps*²

Mrs. Digger-Wasp digs; Mr. Digger-Wasp does not. He is a frail, half-sized little person, who dances with his wife, fights his rival, rolls him in

the dust and then flies off with his lady. First he enjoys a quiet honeymoon and then he buzzes around her house while she does all the work. He is never allowed inside. She digs a hole perhaps half a yard deep, all the time carting out obstructions with her mouth, so that perhaps we ought to say *monthing out*. She claws out the sides of the walls and sweeps out the dust with her legs, walking backwards.

Then she sets out to hunt food, which she is going to store in her larder for her babies. She herself feeds on the juice of flowers, but she knows that her children must eat meat. So she captures a big beetle for them nearly twice the weight of herself.



It is easy to tell you about it, but how did Fabre manage to find out these things? Just try to picture him making his discoveries about Mrs. Digger-Wasp. I suppose he knew her by sight. There are a great many different digger-wasps and a still greater number of kinds of wasps. If anyone were to say to you: "How many kinds of wild blackberries are there in England?" You would answer: "Three or perhaps four" and be dumbfounded when the scientist tells you the truth—that there are about five hundred. When

you are thinking of kinds of living things always remember that. It may look to you as if there are about three kinds of digger-wasps, but remember there are much more likely to be a great many.

So Fabre watches a road with a steep bank, which we are going to see, and, on the bank, he notices threads of dust hanging down. That's the dust Mrs. Digger-Wasp has swept out. Fabre traces a thread upwards and he finds her doorway under a porch. She likes a porch to protect her home from rain—but I wonder how many threads of dust he has to trace upwards before he knows that there is an overhanging cornice, small or large, over every digger-wasp's front door? Next, perhaps he digs himself; because he would like to know what her house is like. It is wide, the width of a thumb, it is long! Very long. You try digging into the rockery for half a yard tracing carefully a narrow tunnel, which winds in unsuspected directions. It is no use doing it once; you might have lighted on an exception. Fabre did it perhaps a hundred times, perhaps more.

How long does he sit in the burning sun of the South watching to see if Mr. Digger-Wasp does any work? It would be unfair to judge him on the conduct of one day or the behaviour of one of the species. Fabre takes no chances, makes no hasty judgments. Remember the long, long, motionless waits in the sun.

But wasps fly . . . and Fabre runs after,

certainly not along the path, but under the olive trees, through the branches and thickets of dry weeds, over dry river-beds, stumbling on the stones. He has to see the rivals meet and fight. Have you ever seen it? I never have.

Then he sits again watching to see how Mrs. Digger-Wasp digs. Perhaps, he thinks, she will do all this just as well if he gives her a bank in a box in his study. He makes the box, makes the soil just of the right kind, hardens it, or crumbles it. All hard work! Then, perhaps, he finds that the work won't satisfy my lady. He begins again.

What is all her digging for? There's something in her house. Right to the farthest, innermost cell Fabre must penetrate and there he finds something interesting: five large beetles, dead. Dead! Dead? They are full of colours; they are quite, quite fresh; their limbs are movable; try certain tests and the things wave their legs about for a short time. Very unlike the dead! Yet, unlike the living! For, left to themselves, they are quite, quite motionless.

In watching the holes, Fabre has often seen Mrs. Digger-Wasp arriving with such a beetle almost twice as large as herself in her hands. She has queer ideas about coming home; she flies to within a certain distance and then she walks "Those beetles aren't dead," says Fabre to himself; "in spite of what the greatest of entomologists says, the wasp's sting hasn't poisoned them. If it had, they would rot; besides they are

very strong fellows, those particular beetles, they can live for a month with a collector's pin through them, but they kick all the time. What is the meaning of this stillness and this complete livingness?"

Fabre must see Mrs. Digger-Wasp catch her victim, must see what she does to him to make him still. Well, he had never seen her catch a beetle; so up he gets and runs again, after Mrs. Digger-Wasp. There she goes, here, there, everywhere, through the lambent air, hard to see and harder to follow. Fabre decides to catch the beetle instead, because beetles walk. But where are they? *She* brings them in any time after ten minutes' search, *he* spends four days and brings in three. Hers are splendid, perfect, without a sign of having been hunted; his are dusty and rather worn, but alive. She too is very spruce; he worn to a frazzle. He suggests we ought to respect insects after such a proof of superiority to man in the matter of catching beetles. Then he puts his shabby beetle to walk about near Mrs. Digger-Wasp's den . . . Out she comes, sees the prey, walks over it and flies away to get something eatable.

Poor Fabre was as disappointed as a nice child. But he was a really bright fellow. He slipped on his thinking-cap and decided that there are moments when even human beings take the second best, moments when they haven't time to think; as Giles, when he is late for school, in-

stead of his new cap, snatches the one that had spent a week in the pond. Just as Mrs. Digger-Wasp lands with her lovely prey in her hands, Fabre drags it away from her with a pair of pincers. She is furious of course; stamps, turns, sees the shabby living beetle and seizes that. But it moves! She doesn't drop it saying: "I have killed you once." Even Fabre can't tell us what explanation she finds for the funny change. But it doesn't matter! She turns her body under the back of the beetle, who, you remember, is being carried upside down, presses his back with her feet till she opens one of his joints—then she jabs the space a few times with her sting. The beetle is instantaneously still. He will stay still for a month without decay or other sign of death. Fabre takes him from his clever slayer and gives her another live beetle. In the end he has his three stilled beetles to examine and finds that, though he knows the exact spot in which they have been struck, he cannot see any injury whatever. He knows no poison ever acted like that. He guesses that Mrs. Digger-Wasp has a knowledge of anatomy far more accurate than his own; that she knows all about a beetle's nervous system.

Fabre goes to books, to the microscope, and finds out that, though most beetles have three nervous centres, when to strike one will not render motionless the others, this particular beetle has only one nerve centre and that is just at the spot where the wasp struck. Put that

centre out of action and the whole beetle is still, paralysed, but alive! This particular wasp knows the make-up of the nervous system of its own particular beetle.

Do you want proof that Fabre was right? He learns the wasp's dodge, he too strikes the beetle in her nerve centre. She is instantaneously still; the trick works when a man does it. But, alas, Fabre has not done it as well as Mrs. Digger-Wasp; after a time, his beetle dies.

Now he knows that the little helpless grub who awakens from the egg on a motionless beetle in its deep hidden cave can begin to eat exactly where its mother laid her egg; its meat will make no objection; it is alive and succulent, but it cannot roll the grub off or flick it with a leg. It lies quite still and is eaten to a shell. When the grub has grown, he can move on for himself to the next beetle and find it also still fresh and very good.

"Let us go," said Giles, "I would not mind if I had had the chance to help Mr. Fabre to watch his digger-wasps. That's the kind of man I would like to know."

CHAPTER III

St. Léons. Fabre's Village

"Far are those tranquil hills
Dyed with fair evening rose,
On urgent, secret errand bent,
A traveller goes"

WALTER DE LA MARE.

THEY had arrived!

All the car's doors flew open at once and its four occupants fell out on to the high tableland of the Rouergue, where Fabre said he was born.

They had hunted that place through great and lovely France, almost like Fabre himself pursuing a beetle to its burrow through earth and rocks. Their hunt seemed as hard as his; for the Rouergue is a high, hidden, mysterious place and not Fabre himself could have found in the heart of earth stranger things than they had seen in the heart of France. They had already decided that the Rouergue was a pleasant place wherein to be born, for they had come past bright green rivers and golden trees. They had climbed over the snow of high passes and threaded at last the wild gorges that lead up to Fabre's country. There, in the gorges of the Dourbie and Tarn, they had followed a road that runs at the bottom of great crevasses. Villages overhang it, perched on ledges of rock and reached by stairs instead of streets. There, where rocks in fantastic shapes seemed to

reach the sky, they had seen battlemented cliffs like castles high in air, and huge stones, that balance themselves giddily on the points of slim pinnacles, and stone men and beasts in a crumbled city of natural rock. They had grown more and more excited as they thought how Fabre must have loved to live in so wild a place. They almost held their breath, as they wondered what the land would be like that had so weird a succession of avenues leading to it.

And now they were really there!

This was the kind of place where Fabre spent his childhood. They were on the top of the world!

The wind caught their breath and pinned their clothes tight against their chests and swept their hair behind them and bit tears from their eyes. They looked out upon a barren moorland, stony, moss-covered, marshy. Here and there a whipped and pollarded tree added desolation to its woe-begoneness; here and there the marsh gathered into small lakes that lit the scenery as they caught the sun.

It is all just as Fabre described it, said Penelope, and if it is as cold as this in the middle of April, he must have been accustomed to long winters of wind and frost and snow.

"That's snow over there," exclaimed Giles, "I am fetching some!" and in a minute, he was back scattering snow on the road.

"It may be cold," said Margaret, "but it is a

great sight. The mountains, which may be the Cevennes or the Auvergne, look just a purple blueness scored with giant bands of amethyst and pearl. I suppose those are the rocks we have come through? And oh, look! The snow-covered peaks beyond, under those waves of sunlit cloud!"

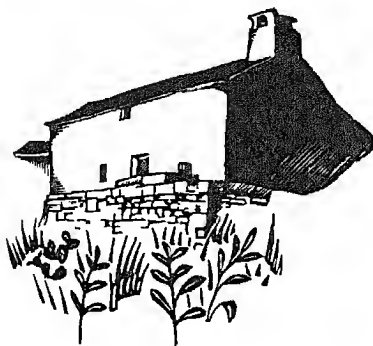
Geraldine turned slowly round. "There are snow mountains everywhere," she said, "and just one cowslip—not a house to be seen. And the poor sheep are so tall and thin, because they have walked miles and miles to collect their bits of grass. Now! Let us find St. Léons, Fabre's village."

That was not so easy, for St. Léons was not on their map, although it had once been a market town. They paused at a rutty, muddy lane that turned from the high road to the left. The children were for going down to try it, but Penelope could not believe that any town, of even past importance, could be approached by so slender a path. So, encouraged by the map which mentioned a town called Bois du Four, they went on. They found two cottages at a cross-road and were told by the children in the two doorways that they were at Bois du Four and that the rutty lane was the best way of approach to St. Léons; that it was longish and that no one would go there at sunset. That warning roused Geraldine's curiosity, but Penelope was stern. Fabre's village was to wait for morning. But they did get a

glimpse of it on their way to a sleeping-place. In the distance, they saw a dark, grey, sombre stone village scrambling down the mountain-side towards a mass of dark trees and towering over it, a grim, four-towered castle.

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Next morning, the little rutty lane on the side of a hill winding among bright trees proved narrower than it looked. Nowhere in its two-and-a-half kilometres did it seem possible to pass another vehicle, but they met nothing. They seemed in that early morning of that entrancing day to be wandering alone in a deserted world. If there had been two paths, there was no one of whom to ask the way; but the lane twisted and turned, solitary too. By the first stone wall in St. Léons they halted, a little subdued by their own excitement. In a broiling sun, the four stood by the car gazing up, gazing down. A rocky path to the left wound up rough stone steps apparently to a sombre deserted castle. To the right, a flight of precipitous stairs in the rock led down through a street of half-ruined houses. Ahead, the road turned out of sight and seemed almost on a level with the top of the church spire. Beyond, were barren hills with the tops of trees bright in the sunshine suggesting woods in the hollows. The village seemed deserted and silent, except for the singing birds and, faintly, afar, the singing waters.



Then a slow heavy footstep came up behind them and a shepherd appeared.

Is this St. Léons? asked Penelope. Is Henri Fabre's house here?

"Yes, that one," he said, pointing to a tiny grey stone house just facing them.

Can we get in?

"Yes, just go up those steps," indicating the pathway, "and push open that door."

Geraldine crept forward on tiptoe as if she feared to awaken a sleeper and pushed hard at a high, narrow, wooden door in a high, stone, garden wall.

The others crept after her feeling shy at entering other people's property unshepherded. Perhaps they all echoed Geraldine's "Oh!" for what they came to was very unexpected: a tiny garden, just a square grass plot, sun-bathed; a tiny grey house with only a door on the garden side; and,

in the centre of the grass, a statue, so exactly Fabre himself, that Geraldine sat straight down on the grass to stare up into the face and make his acquaintance. He was a little, thin, old man in a shabby coat, with pockets bulging with a box for collecting specimens. Under a large-brimmed, soft hat was a wrinkled face with a beautifully thin nose, long, thin, tight-compressed lips and eyes intently fixed on something—an insect of course. Geraldine had never seen anything so intensely and absorbingly occupied as that statue. Fabre was leaning against a broken tree-stump and on it was a kind of lizard. With one hand he was holding a magnifying-glass over the insect and with the other throwing the light properly by holding his coat up to his ear. Now she knew exactly how the great scholar looked when he was watching things; but never in her life had she imagined a statue could be so alive.

"It's just as if he were here," she said. "His father must have been very poor, or he would not have been born in such a tiny house. What is the next thing we hear about him?"

He was christened in the grey church below the garden on September the 22nd, 1823, and given the names Jean Henri Casimir. Then, while he was still a very little boy, his grandfather, his father's father, took him away to Malaval to make one mouth less in the poor home. We are going there this afternoon.

"It's too far to go and come back, I suppose?" asked Geraldine. "I should like to follow him in the order in which he did things."

Penelope always spoilt Geraldine. So, back along the little lane they went, thinking of Fabre's father, Antoine, when, perhaps in the farm cart from Malaval, he set out to take his small boy along that very road more than a hundred years ago. With their slow way of travelling, they must have taken all the day over the journey. First, when the lane was done, they would go straight across the road to Rodez that the little Henri was to know so well later, on and up again to still higher hills.

A long, lovely road the four found it, that sunny spring morning! But soon the car began to crunch over hard, frozen snow. Snow was heaped in drifts among the gorse and at the roots of occasional trees, and above all, so high up were they, snow in glaciers was visible afar on the horizon, on the distant Alpine ranges.

They passed the turning to Vezins, and saw, in a slight hollow, the market town to which Fabre's neighbours drove their sheep. In Vezins wood, the little Fabre used to lie on his back on the moss and sun himself, while he ate black bread and cream and listened to the church bells of St. Léons. Or sometimes, when he was not so good, he would help the other boys to catch the Vezins bulls by the tails. Beyond the wood, they met a flock of sheep led by a shepherd, who drew

them after him by whistling to them like dogs. They saw the peasants burning gorse to make their land a little more fertile, just as the little Fabre saw them. They met carts drawn by great-eyed, slow-moving oxen. One of these they stopped to ask the way to Malaval. The carter said: "You mean where *le grand entomologiste* lived?" And Penelope wondered if an English carter would have known anything about an entomologist who lived one hundred years ago in his village.

"Ask at the farm on the road," he said, "and they will tell you. It is hard to find."

It stood in a wild country, that farm. Penelope knocked at the door, but almost ran away as a very ill-looking, very unsteady farmer slowly opened it.

"Malaval? Ah! *vous cherchez la maison du grand entomologiste*," said he. "Yes, I'll come with you and show you the way. I've got measles and am just out of bed; I feel a bit shaky but come along!"

Oh, No! exclaimed Penelope, we can find it quite easily. It would be dangerous for you to come out in this bitter wind and I'm so afraid the children may catch it.

"Bless you, no! I'm getting better. It's there!"

So a long way away they saw, close under a stretch of snow, a lonely dark grey farm. It was the middle of April and yet snow lay at the very

door of the farm-house! Nothing seemed growing near, just rolling hills heather-covered with, of course, no heather in bloom. There was marsh, a stream in the valley, and close to them, but far enough away from Malaval, the charming, long grey church of Lavaysse with its low spire. That was all the sign of habitation near except the sick man's house. They dared not take their guide any farther. They wanted to go on alone, but a marshy valley to cross, a bridgeless stream, a pathless mountain to climb and watchdogs already barking at strangers snatched away their morning courage.

Fabre must tell us about it, said Penél, as they sat, a little disconsolate, amid the wind-scorched heather gazing at the lonely and distant farm. Imagine the little boy stumping about in that farm-yard, knee-deep in cow dung and pools of brownish damp, himself deliciously dirty, friends with the geese, calves and sheep.

Then, one morning, something great happened to him—he, the future scientist, made his first scientific discovery. He discovered all for himself that he saw the sun with his eyes and not with his mouth! This is how he tells the tale⁸:

"I was five or six years old. I see myself in a homespun pinafore trailing about my bare toes; I remember my hanky hanging to my belt tied on with a piece of string, because I lose it so often and use my sleeve instead. There I am one morning, my hands behind my back, a thoughtful imp

facing the sun. Its dazzling splendour fascinates me. I am the moth that the candle draws to itself. Is it with my mouth? Is it with my eyes that I enjoy this radiant glory?

"Such is the question my earliest curiosity asks. Don't smile. The future observer is practising. I open my mouth wide and shut my eyes, the glory disappears. I open my eyes and shut my mouth, the glory reappears. I do it over again with the same result. So that's that. I know by experience that I see the sun with my eyes. What a discovery! In the evening I take the household into my confidence. My grandmother smiles, pondering at my innocence. The others laugh. That's the way of the world.

"Another discovery. At nightfall, in the thicket, a sort of click, click, catches my attention, heard very faintly in the evening silence. What makes that noise? Is it a bird calling from its nest? I shall have to see and as quickly as possible. Of course, there is the wolf to be thought of which they have told me comes out of the wood at this hour. Let's go all the same, but not far, only just there behind that clump of broom.

"I keep still and listen for a long time but nothing happens. At the least sound of a twig snapping in the thicket the click stops. The next night and the next I go. Then my tenacity triumphs. Fuff! a quick movement of my hand and I have caught the singer. A grasshopper.

Now I know by observation that grasshoppers sing."

Inside that farm-house, there's a large kitchen if no one has altered it since Fabre's day, with a huge open fire-place big enough to burn whole tree trunks. Often in the winter evenings the only light was given by a cluster of specially luminous pine splinters used to save the oil.

Picture the family as it used to be: Grannie, perhaps still wearing indoors her Rouergue peasant hat, flat, large brimmed, as big as a wheel, with a tiny crown no bigger than a five-shilling piece and tied under her chin with a black ribbon. We haven't met one such hat to-day, perhaps no one wears them any more.

At meal-times the old lady would stand over the big pot and ladle out the soup into each one's plate and then plomp his share of turnip and fat ham on top. At the other end of the table stood the water jug for the thirsty to have as much as they liked. "Ah," writes Fabre, "what a good appetite we had and what a gay meal, especially when a white cheese, home-made, came to finish off the feast."

Then after dinner Grannie would spin with a real spinning-wheel and the little boys and little girls would kneel in circle round her, stretching their hands to the joyous flame and listening with all their ears. "She told us tales," says Fabre, "not of much variety indeed, but full of marvels and very welcome, for the wolf often appeared

in them, that hero who so frequently made our flesh creep. I should have liked to see him, but the shepherd always refused to let me share his watch in his straw hut."

And after the tales, Fabre as youngest, slept on a mattress, but the others had only straw. That shows how poor they were, but his poverty did not make him less great.

When he was seven, he had to go to school, and, as there was no school at Malaval, he returned to St. Léons. Let us imagine we have a rough pony, or perhaps a slow bullock, in front of a two-wheeled cart and are driving with him home. He was probably sad, for he loved his grandmother very much, probably more than anybody in the world just then. He must have spent a long time saying good-bye to the geese and pigs and calves. Little boys do not care much about scenery, so perhaps he did not look back at the snow peaks.

"These beeches saw him pass," said Giles; "they are more than a hundred years old."

"He must have been very excited at the thought of seeing his father and mother again after so long a time," suggested Margaret.

CHAPTER IV

School and a Pond

"From troubles of the world
I turn to ducks .
Tails uppermost or waddling
Sailor-like on the shores
Of pond, or paddling
—left! right!—with fanlike feet "

HARVEY

"THAT's the school house!" exclaimed Geraldine, as they stopped the car again in St. Léon's. "But Oh! it's quite new and next to Fabre's home. That's not the nice, funny, old place he went to; but let's sit on his garden wall and hear what he says. Do you think they sent him to school the very morning he got back?"

He does not tell us that, but this is what he writes of his school⁴:

"What shall I call the room in which I was to make the acquaintance of the alphabet? It would not be possible to find a name for it, for it served for everything. It was at once school, kitchen, bedroom, refectory and even henhouse and pig-stye. In those days, people didn't use palaces for schools, a miserable hut sufficed.

"From that room, a ladder led to the one above; under the ladder, there was a big shed in a wooden alcove. What was there above? I never really found out. From time to time I saw the master bring down on armful of hay for the

ass or a basket of apples that the housekeeper poured into the pot, where piggie pie boiled. . . . Those two rooms were the whole house. Let us come back to the lower one. To the south was the window, the only one in the house and so small that your head touched the top and your shoulders the sides at the same time. That sunny opening was the only gay point in the dwelling; it looked out upon nearly the whole village and in its recess stood the master's table.

"There was a niche in the opposite wall where a copper pail glittered full of water. From that the thirsty drank whenever they wished, by means of a cup which was always within reach. At the top of the niche, on some shelves, shone the pewter dishes, plates and goblets that were taken down from their sanctuary only on feast days.

"Here and there, wherever a little light came in, highly-coloured pictures were stuck on the wall. Among them 'Our Lady of Seven Sorrows,' the divine mother of grief, half opening her blue cloak to show her seven-times-pierced heart. Between the sun and moon, like two big eyes staring at you, was the Father Eternal, whose robes seemed blown into a balloon by the wind.

"To the right of the window we had 'The Wandering Jew' in a three-cornered hat, a white leather apron, iron-nailed shoes, and a stout stick in his hand. *Never was seen a man with beard so long* was printed around him, and the painter had not forgotten that detail, for the old man's

beard was spread in a snowy avalanche over his apron and down to his knees.

"To the left was 'Geneviève de Brabant and the Fawn'. In the thickets fierce Golo lurked, a dagger in his hand. Above was 'The Death of Monsieur Credit', killed by his debtors on the threshold of his inn, and so on, a collection of varied subjects on the four walls.

"If the museum of halfpenny pictures delighted me all the year round, I had another joy in winter at the time of the great cold when the snow lay long on the ground. Against the wall was the fireplace, a really huge fireplace like my Grandfather's. Its overhanging ledge took up the whole width of the room. In the middle of it was the fire; but to right and left opened two little nooks made half of wood and half of masonry. Each held a bed with a mattress of wheat husks. Two sliding panels served as curtains and shut the box if the sleeper wished to be alone. This sleeping place in the chimney corner served as dormitory for the privileged—the two school boarders. It must have been comfortable in there at night with the panels closed when the north wind whistled at the entrance of the narrow valley making eddies in the snow."

Look at that neat, stone, twentieth-century village school, said Penelope, so prim and clean; and picture that other, where nevertheless a great man had his first lessons.

In that older schoolroom there were three-

legged stools and benches; certainly not such a thing as a desk. The rest of the furniture consisted of a heavy shovel, that needed two hands to use, a pair of bellows, a salt box hanging on the wall, because the dinner was cooking on the fire; three big pots full to the brim, which all lesson-time gave out little jets of steam and the gentle pouf! pouf! which is the usual conversation of boiling pots. Sometimes a bold lad would, when the master's back was turned, dip in a fork and take out a potato to add to his own bread. For the matter of that, the boys ate all lesson time, cracking nuts or munching crusts. They had also unexpected amusement; for if anyone left the door open—and open they left it as often as possible—in would come a family of piglets, trooping, trotting, grunting, with fine tails nicely curled. Little Henri took special note of them, their ingratiating ways, their bright eyes twinkling up at you, asking what more you had for their feasting. And when the pigs had gone, came mother hen with her yellow, fluffy, downy brood. Henri loved to stroke the soft things as they pecked around.

And the schoolmaster? He seems to have been very patient and to have used no severer weapon against the intruders than a wave of his pocket-handkerchief. He was a busy man and many things besides a schoolmaster. First and foremost he managed the affairs of the absentee landlord of the castle.

All the children turned and looked up at the square solid grey mass with its four pointed turrets, which even in Fabre's day were used as dovecotes.

"But it must be very empty now," said Geraldine. "I haven't seen a single dove or pigeon. What else did the schoolmaster do except chase the pigs and manage the castle?"

Managing the castle meant that he had to oversee the hay and the harvest, the plum gathering and the milking; so that nearly all the summer and well into autumn the schoolmaster and elder scholars were out of school and the younger did lessons in the hay or substituted for lessons, when their master happened to want them, catching snails, or cleaning the dovecote.

Then the schoolmaster was also the village barber and the village bellringer, so that a wedding or a christening stopped lessons. So did dark clouds, for the bell had to be rung to ward off hail and lightning. He was leader of the choir and, of course, they had services on saints' days as well as Sundays. He regulated the church clock, not probably the present church clock but certainly one in the same place. As there were no other clocks near, he set it by the sun.

"You've forgotten, Penél," said Giles, "to mention anything about lessons."

The schoolmaster had to teach all ages at once. The little ones sat on a bench, an alphabet in their hands, little grey books with a pigeon on the out-

side and inside *ba be bi bo bu*. The elders sat at table learning to write. Henri studied the pigeon, and sometimes asked a neighbour's help with his letters, but they knew little more than he. But he knew the pigeon off by heart, its one bright eye and its feathers.

Arithmetic consisted of addition, subtraction and tables up to twelve times; for in those days France did not have decimals.

"Shame she ever began!" exclaimed Giles, "did she invent the horrid things?"

On a Saturday, went on Penél, they always ended with tables. One boy would get up and recite twice one are two, up to twice twelve, and then the whole class would stand and shout that table all together with so much noise that the pigs and chickens took flight; and so on to twelve times. They really knew their tables, but they never used them. For reading, they read nothing but Bible stories in French and their prayers in Latin.

No one there had ever heard of geography or history.

"Or nature study?" asked Margaret.

No, laughed Penelope, nothing of that kind.

"Then what made Fabre take it up?" asked Giles.

Ah! that is a mystery which he himself tried to solve. Remember he studied the pigeon. This is what he says: "His round eye, surrounded by a circle of points, seemed to smile at me. His wing,

every feather of which I count, speaks to me of flight among the beautiful clouds; it carries me to the beechwoods whose smooth trunks rise from a moss carpet spotted with toadstools like eggs left by a wandering hen; it takes me to the snowy peaks, where the wind leaves the print of its red feet. My friend the pigeon is magnificent. He consoles me for the bitterness hidden under the cover. Thanks to him I am good on my bench and wait without too much impatience permission to go."

He studied the snails too, which he was supposed to collect from under those box hedges which you can just see around the castle. But sometimes his heart failed him. Those snails were so beautiful, pink, white and brown, marked with black spiral rings. He filled his pockets with the prettiest to enjoy looking at them at his ease.

At hay-making time, he meets a frog, or a beetle bluer than the sky. He discovers the wild narcissus and learns to taste the sweet honey in its centre; but learns also that if he does too much of that he gets a headache, which however does not spoil his love for the beautiful white flower with its red centre.

"I am glad we passed such fields of them as we came along," said Geraldine, "but they are not out up here yet."

At nutting time, he examined crickets and found that some have blue wings and some red.

"I had no need of a master," he says, "my passion for beasts and plants grew of itself."

But there did come a day when he learnt to read. His father brought him from town a card divided into squares with the alphabet as initials of animals; A for Ass and so on; and because he already loved the animals and knew their names, he understood at last the meaning of letters. Only H puzzled him, because he knew nothing about a Hippopotamus, Z too, because he had not seen a Zebra.

Then, as a reward for his learning, he was given La Fontaine's *Fables*, and in these too there were beasts and La Fontaine became his friend. We must hurry on to see if we can find any of the things he tells us of in the village.

I am afraid the nut tree of which he speaks has gone from his garden. It used to reach Fabre's wall from the notary's garden below and Henri and his brother Frederick would climb along its branch, perilously poised over that depth down there, to gather the nuts; and the grape arbour has gone too, of which he was so proud because no one else grew grapes in the village. But the south wall of his house seems still so sunny that even grapes might grow on it.

There was a window of the little house which looked out to a long hill topped by a row of wind-driven oaks. Beside that window, Jean Henri fastened his alphabet card so that he could see the world and his beloved *master*, the card,

at the same time. From it he could overlook the village, the valley, the stream, the beech wood and the long hill that shut them all in and ended the world for the little boy. But one day he meant to get to the top, to visit those bent and twisted trees. On the way, however, he saw a bird flitting from stone to stone. He stayed to watch. He went closer and found his first nest and a cluster of eggs. He took just one, but on his way home he met the curate.

"What have you there?" asked that man.

"All abashed," says Fabre, "I open my hand and show my blue egg on its bed of moss."

"Ah! a *saxicola*'s egg!"

The crime stood confessed and a promise was given to leave birds their babies, but the little Jean Henri that day learned that birds have names—and if birds have names, beasts and fishes have them too perhaps. He went on to ask himself who gave them names.

"So those," said Margaret, "are the very trees on the skyline that watched him when he missed his visit to them."

Then the children turned up the rocky path behind the house that runs up to the castle. Facing them was a covered spring.

That, said Penelope, is where the villagers used to get drinking water instead of going all the way down to the fountain.

One day, when the Fabres were growing poorer and poorer, their father said, "Look at the

miller who not only has his trade, but makes money by keeping ducks. We must have ducks too." Henri tells us he was listening, elbows on table feigning sleep. He felt rather like Tom Thumb, who, hidden under the table, heard *his* parents' horrible plans! but what *he* heard was most exciting talk of how he was to become a duck herd and help his parents to earn money. Well, they got the eggs and hatched the ducks, but there came a time when the ducklings needed a pond. Henri was to take them out to water. But where? Down the village was too dangerous because of dogs, cats and other things. That spring opposite us, he says, he would never have been allowed to use for so dirty a purpose. But farther up the path he found another natural pond made by the stream you are walking through, Giles, and there is a pond sure enough!

All the children moved forward to lean over the low castle wall.

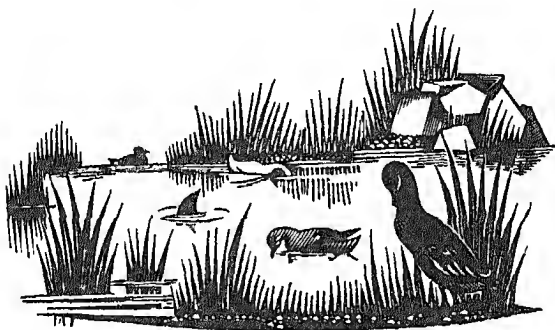
On a grassy ledge, in the castle enclosure there certainly was a little square reservoir.

"That's not it," declared Geraldine, "this one is much more likely, round this corner where the stream runs wild, that's a pond!"

So it was! a pond three feet long by about two wide, and close to it there was a tiny cataract where the mountain stream tumbled over little boulders to the path. But neither the castle pond, nor the roadway pond, nor any other pond the children could find, answered exactly to Fabre's

description of his pond. They had at the end to decide that the new cottages, which were not there in Fabre's time, had destroyed the real pond by shutting some of the stream into an iron pipe from which a useful fountain gushed.

If Fabre's pond was gone, the waterfall was there and by that they sat to hear:



The Story of the Pond¹⁵

"On the heights," writes Fabre, "the path behind the castle soon turns sharply and reaches a little plain where the meadows begin. It runs along a rocky hill, out of which trickles a thread of water that makes a fair-sized pond. There is daylong quiet there. The ducklings will be happy and the path is so lonely that they will meet nothing on the way.

"Young man, yours the luck to lead them to the lovely place! Ah! what a grand day it was, my first day as duckherd! Why do pleasures

always have to be spoilt by something? My poor soft feet have had too much of stones and just that day I had a large blister. I had to go bare-foot, careful not to put the injured heel to the ground.

"Let's get on with it, limping, stick in hand, behind my ducks! Their feet are soft too; they waddle, they complain. They would stop altogether if we didn't call a halt sometimes under an ash.

"We are there at last. It's a perfect place for my little birds: shallow, tepid water and lumps of mossy mud, like little green islands. Baths begin at once. The ducklings quack and flutter, they drink, but let the water out of their mouths, only swallowing the dainty bits. In the deeper pools they put their tails up and heads under water. They are happy. Let's leave them. It's my turn to enjoy the pond.

"What's this? On the mud there are knotted cords the colour of soot, rather like bits of wool from an old knitted sock. Some shepherdess knitting black socks and dissatisfied with her work has begun over again and with an impatient gesture thrown out the wool, which has kept the waves made in it by the needles. One would really think so.

"I pick up the end of one of those cords in my hand. It is sticky and extremely soft; it glides, impossible to hold, from between my fingers. Some of the knots burst and lose their

contents. A black globule the size of a pin's head and followed by a flat tail comes out. I recognise in miniature an object that is very well known to me—a tadpole; frog's children! I have enough of those, so I won't bother about the twisted cords.

"The next things please me better; they are swimming round and round on the surface and their backs shine in the sun. If I raise my hand to seize them, on the instant they are gone, but where? I don't know. It's a pity. I should like to see them close to and make them twist and turn in a little basin I would prepare for them.

"Let me look at the bottom of the water, clearing away the bunches of green threads through which pearls of air rise to mass in foam. Down there, there is something of everything; pretty little shells with squat close-packed towers; little worms wearing plumes; things with soft little wings continually moving on their backs. What are they all doing? What are they all called? I don't know! I just gaze and gaze, conquered by the incomprehensible mystery of water.

"At the point where the pond overflows into the meadow are some alders.

"Then I make a wonderful discovery—a beetle, not a big one. Oh! no, smaller than a cherry stone but of an indescribable blue—angels in Paradise must wear dresses of that colour. I put the splendid little beast in a dead snail's shell and shut it in with a leaf. At home when I have

time I shall admire this jewel. Meanwhile, other diversion calls me. The fountain that feeds the pond gurgles from the rock—clear and cold. The water collects at first in a bowl, such as my two palms could make, then overflows. That fall is really asking for a mill. Two bits of straw artistically crossed on an axis provide my wheel, flat stones raised on end provide supports. Most successful! The mill turns perfectly. My triumph would be complete if I could share it. For lack of other comrades I invite the ducks.

“Still everything grows monotonous—even a mill made of two straws. Let us make a dam. Of stones there is no lack. I choose the most suitable, break those that are too big; suddenly here is something that puts an end to my dam.

“On one of the broken stones, at the bottom of a cavity as big as my fist, something shines like glass. The space is lined with glittering facets, six by six, which sparkle in the sun. I have seen something like them on feast days in church when the candle crystals reflect the lighted altar.

“And there are stories of a dragon who guards his underground treasure. The children have told them one to another in summer evenings on the threshing-floor straw. Confusedly, but gloriously, the words *precious stones* sound in my ears. I dream of king's crowns and princesses' tiaras. In breaking a stone, have I discovered richer jewels than the tiny one in my mother's ring? I must have more. The dragon of the

underworld treasures is generous. He grants me diamonds in such quantity that I become possessor of stones in which superb groups sparkle. He does more. He gives me his gold. The thread of water trickling from the rock falls on a bed of fine sand which it turns over. If I lean towards the sun I see a sparkle of gold at the edge of the fall. Can that be the famous metal of which they make golden *Louis* which are so rare at home? It shines enough anyway!

"I break another stone. Oh, the funny thing which comes away whole in my hand! It's turned in a spiral like a little ram's horn. How did it get into a stone?

"My pockets are bulging with curiosities and wealth. It is late and the ducklings have eaten all they can—with all my joys, my swollen heel has been forgotten.

"My way back is festival. A voice sings inside me. It has no language, it is softer than words and vague as a dream. It speaks for the first time of the mysteries of a pond; it glorifies the celestial insect which I can hear moving in its snail shell, its temporary cage; it whispers of the secrets of rocks, of specks of gold, of cut diamond, of rams' horns changed to stone. Oh, poor silly! put away your joys. I arrive. My pockets are seen to be bulging, outrageously stuffed with stones. Under their weight and because of their jagged edges, the pockets have given way.

"'You wicked young idiot,' exclaims my

father, 'I sent you to look after ducks and you amuse yourself picking up stones as if we hadn't enough round this house! Throw away your pebbles.'

"I obey with a breaking heart, diamonds, sands of gold, petrified horn, beetle from heaven, join the rubbish-heap.

"My mother grieves. 'Bring up children to see them going wrong! You'll break my heart. Grass you might have collected, that does for the rabbits. But stones to tear your pockets! Insects that might poison your hands! What do you want with them, silly? Someone has bewitched you.'"

"I expect," said Geraldine, "his pockets always bulged after that when no one was looking! And now, on his statue, they will go on bulging for ever and ever."

"Now for the village!" exclaimed Giles. "How do we get down?"

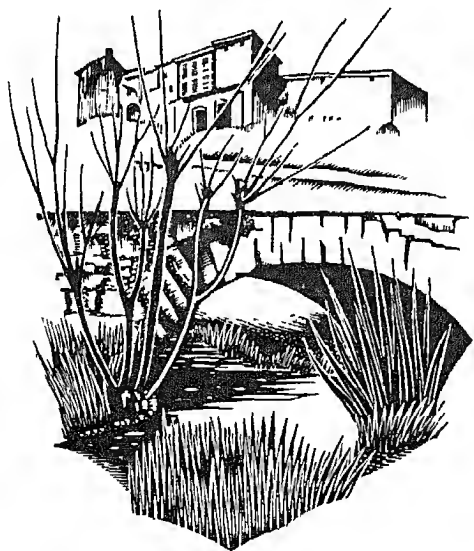
It was indeed a scramble. No wonder Fabre said even sure-footed mules would not trust themselves to that path when loaded. A rough stone stairway led down among scattered gardens, full of pear-blossom and plum and old grey houses. There they saw the upper mill, with its high wall where Henri had climbed on a companion's shoulder and looking over, had seen the water still and stagnant and a salamander swimming.

Then they came upon a lovely stream; then the

stepping-stones and close beside the stream, the very alders and ash of which Fabre talked, still making an arch with their roots in the water. There were small fish there too, so that the children knew they had discovered the very spot where Fabre admired the red-necked minnows.

"What does Fabre say about them, Penél?" asked Giles.

He writes: "There the minnows with their red neckties have settled. Let me move gently, very gently forward and lie on the ground to look. How beautiful the little red-throated fish are! In



a cluster, their heads upstream, they puff out their cheeks and suck them in again, rinsing their mouths endlessly in little gulps. To keep themselves still in flowing water they need nothing but the quiver of a tail or a fin. A leaf falls from a tree. Pst! The company has gone!"

There, on the other side of the stream is the beech spinney, with its slender smooth stems that Fabre loved. There Henri first made acquaintance with toadstools and this is how he writes of the event:

"The wood is carpeted with moss. As soon as you tread on its soft velvet, you see a toadstool; it is still shut up and looks like an egg left there by a wandering hen. It is the first I have gathered, the first that I have turned round and round in my fingers, learning a little of its structure with that vague curiosity which is the awakening of observation. I soon find others, different in shape, size, colour. It's a feast for my eyes that have not seen the like. Some are bell-shaped, some like an extinguisher, some like a goblet; some are drawn out like a spindle, some hollow and funnel-shaped, some rounded to a sphere. I meet some, which when you break them, weep milky tears. I crush others which immediately turn blue. I see big ones which drop rotten at a touch, others that are full of worms. Others are pear-shaped and dry with a hole at the end, a kind of chimney out of which comes smoke when I tap them with the tip of my finger. They are the

oddest. I fill my pocket with them to make them smoke to my heart's content, at home, till they are empty and nothing is left but a kind of starch.

"My visits to the beech wood being repeated, I managed to divide my finds into three classes: toadstools with their underneath either in rays, or in soft cushions full of holes, or in cushions full of pimples."

Later Fabre found that his division was well known and that the different kinds had received Latin names. He says: "The toadstool grew in my esteem. To deserve a Latin name, he must be really an important fellow."⁶

Next, the four tried to find another of Fabre's landmarks: the *Tel* or giant lime-tree in whose great, hollow trunk the village children used to play hide and seek with Fabre. But search as they would, they could not find it. Under its shelter Fabre said the fairs used to be held. Fair day was a grand annual event in little Henri's life. He learnt that the world did not end with his circle of hills. He saw wine arrive on mule-back in skin bottles, jars of stewed pears and great baskets of grapes so rare that everyone was greedy for them. He admired the turn-table where for a halfpenny you won a red stick of barley-sugar or a bottle of sugared aniseed or nothing at all.

Flowered cottons in rolls lay on the ground—a temptation to the girls to spend money; heaps of beech-wood sabots were there, for then all country people wore wooden shoes; tops, too, for

boys to play with and wooden flutes. Not only the girls were tempted to spend money, but the boys, for these flutes, Fabre says, were for whistling to the sheep.

"And," almost shouted Giles, "this very morning weren't the shepherds we met whistling to their sheep to come along? Now I do call that interesting! Fancy some old book telling you that flutes were used for fluting to the sheep and you actually hear it going on around you here, though no one else in other countries has thought of such a thing. There is something after all in history "

"Giles only means that music comes into history sometimes," said Geraldine "As we can't see that great hollow lime-tree of the fair, we must go up to the village."

It was a steep climb past the church door to the Square. That was a tiny Square indeed, yet there was the arched fountain Fabre described and there, as if arranged to delight the children, a woman was scrubbing tin plates with sand and vinegar. Fabre said he could hear that noise from his bedroom window and it is going on still like the whistling to the sheep.

CHAPTER V

Misfortune comes to Fabre

Now, said Penelope, let us follow Jean Henri on another journey. When he was ten, his parents left the village and went to live in the town of Rodez. Henri did not mind at the time, for little boys always like something new, but afterwards he was often homesick for his native village.

The cart, carrying all the possessions the family wished to keep, went slowly creeping down the long lane to Bois du Four. Fabre's father, though he often failed in his work, was a cheerful man, who believed he was going to succeed in something new. This time he intended to have a café at Rodez, the chief city of the Auvergne country. He was the first of his race to leave the country and live in a town. Perhaps he blamed the moor for his misfortunes; perhaps he hoped the city would be paved with gold. As they drove along, they would pass the little road that led to Ségur and Antoine would probably tell his children of the marriage contract that was made there in 1791 between their Malaval grandparents. Perhaps the ancient beech woods still standing on the hill saw them pass and reminded Fabre of his many-coloured toadstools he was leaving behind.

As they neared Rodez, they would come upon the famous view of the city that no one who has

seen it ever forgets: a city high on a lonely hill standing out against the sky; its rose-red cathedral looking, as Margaret said, "like an enormous eagle brooding on a nest whose sticks are towers and houses".

Rodez, when the children arrived there, did not know Fabre, or it only knew him, as they did, out of books and for his far renown. Their anxious questionings could find no one who could tell them where he lived in the city or whether it was to the Lycée Foch that he went as a schoolboy.

"Of course it is," said an old man whom they questioned at a street corner, "it's an ancient Lycée and it has only been called Lycée Foch since the war, because Foch was also at school there."

They looked reverently at the lofty chapel, for Henri was given a free place in school on condition of being one of the servers at Mass. Dressed in a red cap, a red cassock and a white surplice, he and three others used to ring the bell at Mass and to move the Missal from place to place during the service. But he, the youngest of the four, knew nothing of what he was doing; he just made four and left the work to the others who understood what it meant.

"I trembled," he said, "when two from this side, two from that, we met in the middle of the chancel to intone *Domine! Salvum fac regnum*. Let me confess that, mute with shyness, I left it to the others."

At Rodez he had real lessons and studied Latin and Greek. He got on well with Latin, but Greek legends seemed strange to him. When he heard of Cadmus, who sowed dragons' teeth, which grew into men who came up and slew one another—all except one who was tough as leather and the son of the last back molar tooth—he said he would not have been surprised had they talked to him of the doings of the man in the moon. Virgil he loved, for Virgil talked about bees and cicadas, turtle-doves and crows, and did it in high-sounding verse. The little boy loved both beasts and verse. That was lucky for him. He read Virgil because of the beasts, but in doing so he learnt Latin. And later, when he was very poor, his Latin helped him through an examination, which in its turn gave him his chance to know his beasts.

Fabre's great joy at Rodez was to go down a steep path leading to the meadows along the river Aveyron. And there every Thursday and Sunday afternoon, which were half-holidays, he sought for what the country, according to the time of year, had to give!

"Daffodils!" exclaimed Margaret, "look! fields of daffodils, their leaves make the grass a different green, and just a few are out and so many cowslips."

Yes, he mentioned that he found both daffodils and cowslips; that he watched the linnets on their nests and waited under the wind-shaken poplars

to see if the cockchafers were dropping from their branches. Though he does not say so, he must have found snakeshead fritillary, since the meadows are purple with it and the banks are thick with violets!

But did you hear that turkey's gobble, gobble? What do you think Fabre and his young friends used to do with the turkeys? They would catch one,⁸ put its head under its wing, rock it till it slept and put it to lie down in the field. The creature would remain motionless and they would proceed to do the same with all the flock, till an angry farmer's wife caught the young malefactors and then there was trouble. Fabre at a later time said he thought the turkeys were hypnotised

Fabre stayed at Rodez till he was fourteen; then his father, whose café had failed, moved to Toulouse.

"Shall we start off there?" exclaimed Giles.

No! Fabre was there only one year and tells us nothing about it. He went as a free pupil to the Lycée and completed his fifth year of study. That is all we know. He was thinking, someone says, at that time of taking up medicine; but, bad luck, which the French call "La Guigne", or the "sweet cherry" pursued his family and they became very poor. They tried another café in beautiful Montpellier, in the hot southern plain of Provence, but that did not succeed either. The family lost everything and Fabre was forced to

wander the roads in search of a living. He became very unhappy, very lonely, starving most of the time. He does not like to dwell on the memory of it. Like most brave people he thinks the less said about unhappiness the better. "Now, boy," he writes, addressing himself, "earn as best you can your pennyworth of chips. Life is going to be an abominable hell. Let's pass on quickly. In this misery, my love of insects should have been vanquished. But it wasn't. I remember a certain cockchafer I met for the first time that was a ray of sunshine in the black unhappiness of the day."

The next story he tells of himself happened near Beaucaire.

"Let's go there then," said Geraldine.

That afternoon, leaving Rodez and turning south again, they drifted down the strange lonesome valleys of the Auvergne with their beautifully-named villages: Severac l'Eglisé, La Rivière, Le Rosier, and came upon a flower they had not met before, hepatica, which some people call the most beautiful of the wild flowers. Grey-blue or white it is, a large soft star, living in the crannies of the rocks and festooning with lovely colour the high cliffs overlooking the road. Nîmes-Beaucaire! the road itself had nothing very interesting, at any rate to spoilt children of fortune who had seen so many lovely things. It was edged with young golden-brown bushes and occasional cypresses; here and there were gardens.

protected with high hedges, and here and there a swamp with tall bulrushes.

But somewhere on that famous highway, Jean Henri wandered hungry, plucking, for it was in the autumn that he walked that way, a bunch of grapes here and there, which is always allowed in a wine-growing country; doing a service whenever he could for a penny or so; and one day exchanging those hard-earned and so necessary pence for a book of poetry. He had to go without his dinner for that book, because it was really his last penny that he had spent. Then he took off the edge of his hunger by reciting the verses he had bought.

The writer was the poet Reboul, a baker of Nîmes. Perhaps Fabre, as he said the verses, could not help longing a little for the poet's nice hot bread

There is plenty of hidden poetry on this road. Look at the towers of Beaucaire blocking the horizon, or it may be Tarascon, for they are twin cities.

Here is a tale of Tarascon:

In the Hundred Years' War—how easy it is to say—a hundred years' war! But it must have been terrible to live all one's life in war-time and your father would have lived all his and your grandfather his in an endless war. All this fair Provence, the gayest, richest of lands, was laid waste by the English and the land and people turned black with fire and famine. The English held out in Tarascon and the Count of Anjou

besieged it for the French in vain.

But there came riding this very road an unarmed prisoner on parole. The count said to him: "Tell me, for your skill is great, how to take Tarascon?" The traveller did not answer, but mounted his horse and rode to the walls of the beleaguered city and there sat unarmed, peeling, like a schoolboy, a white willow switch. And while he sat, wild rumour ran through the city, for the man was known and none noticed he was unarmed. But they spread the tale that there had come a giant, a goblin, a horror, an overwhelming force against the city; and so Tarascon surrendered to the mere thought that Bertrand du Guesclin sat his horse at her gates.

The chief story of Beaucaire is this. Aucassin, son of the Count of Beaucaire, loved Nicolette who was so white and fair that her bare toes made the daisies look black when she walked among them. But her father, to separate the lovers, cast his son into a subterranean prison, there in Beaucaire, with walls of a double thickness of marble. Then Nicolette in the night, listening to the nightingale and thinking of her lover, tore her bedclothes into strips, made a rope, fastened it to the bedstead and so climbed into the garden and slipped, in the shadow of the walls, to talk to Aucassin. It is a lovely old tale told in charming ancient French poetry.

And what did Fabre do in the city of Aucassin and Nicolette? He sold lemons in the market-

place and he joined the railway workers, who in those early days of railways, were laying the first line from Beaucaire to Nîmes.

He also discovered the Pine Cockchafer.⁹

He is a handsome fellow, the cockchafer, who lives in pine-trees, with a coat of embossed brown velvet beflowered with white and on his head he carries a magnificent sevenfold plume. What he does with that, Fabre doesn't know, unless it is to bedazzle the eyes of his lady.

He is generally silent; but when he is in trouble, he complains with a kind of musical chanting.

"How does he do it?" asked Giles.

He rubs the soft tip of his body along the sharp edge of his wing and makes a mournful, rhythmic chant much like the sound you make yourself when you rub the soft damp tip of your finger along a wineglass edge.

There are other beetles that make music, the little fellow for instance who knows that his own particular truffle is underground at a certain spot. Fabre buried six truffles, marked each spot with a long straw, filled in all the holes with inches of sand, smoothed the surface, so that no one could see there was anything underneath. He had first found out that that kind of truffle had no scent. When he placed six beetles on the sand they all found their truffles without any trying—dug straight down and got them! That little fellow also rubs his body against his wings to make a sad musical complaint when he is upset.

The capricorn beetles also make music, but by rubbing their breastplates against their chests, and they, like the other two, use music to express disgust or pain. Other insects, Fabre says, use it "to charm their solitude or as an invitation to their mate or just to express joy in the sun or joy in being alive" The majority of these musicians are silent in danger. At the slightest disturbance the grasshopper shuts his musical box and the cricket lowers his wings and so stops the vibrations they make when raised. On the contrary, the cicada cries despairingly when one catches him. If the capricorn and the cicada make a noise at the approach of danger, why are the grasshopper and the cricket silent?

Another question Fabre asks himself: "Do insects hear our music?" One of his friends sent him a musical box with a particularly clear and crystalline sound. With it he played "Les Cloches de Corneville" din, dan, din, down! to the cockchafer.

"Not a movement does the contemplative insect make," he exclaims, "its feathered plume keeps exactly the same position as when all was silent" He played his tune to two other insects with the same result. He remarks that even artillery did not interrupt the cicada's concerts. "Shall we think from this that insects are deaf?" he asks, and answers "that would be going much too far. These experiments allow us to say only that an insect's hearing is not like ours."

CHAPTER VI

A Famous Lesson at Avignon

"Proud and godly kings had built her, long ago,
With her towers and tombs and statues all a-row,
With her fair and floral air and the love that lingers there,
And the streets where the great men go"

FLECKER

So Fabre left Beaucaire, the town of his first cockchafer, and came to Avignon, a city as full of tales as its mighty river Rhone is full of water.

As he crossed the bridge, perhaps he stopped to watch the brimming Rhone or to gaze at the splendid palace of the popes that stands on the other side, for once upon a time there were rival popes and one of them held his court at Avignon. Probably Fabre looked long to his left at the other and broken bridge with the chapel on it, for there is a very old nursery song about that bridge; and though it is only a children's song, it makes the bridge as famous as the bells of St. Clement's.

"Sur le Pont d'Avignon, l'on y passe
L'on y danse sur le Pont d'Avignon,
L'on y danse tous en rond."

He looked at the great city facing him, and perhaps he wondered how he could earn a living and yet keep up his study of country things. One thing he knew and that was that he would be obliged to work very hard.

There was at Avignon the College of Vau-

cluse, where boys were trained to teach in elementary schools. Fabre, even then, longed to go to the university to study science, but without money that was impossible. He tried the entrance examination for the training college and did so well that he won a bursary which gave him for two years a roof, food and the opportunity to learn. One wonders who gave him his clothes, but he does not tell us.

"That college is the next place we must find," said Margaret, "but how? Avignon is so big, so busy, so full of tourists."

They were standing by the railings of a fountained garden in the tram-blocked main avenue of the city, thinking how cool and inviting the shade looked under the plane-trees on that scorching morning.

Why not explore the garden while I get some money? said Penelope. You will be safe there.

In a few minutes the children saw her running from the bank, pursued by the banker. No! Nothing awful had happened. Only it chanced that Fabre's college had been in that very garden and that the banker was as excited to show Penelope exactly where it stood as she was to hear. It had long ago been abandoned and Avignon had built a new palatial training college two miles away, but the old church of Saint Martial was still there towering over the plane-trees, the church which in Fabre's time was used for lessons by the well-off grammar school boys,

while the elementary training college boys longed in vain to enter it.

The training college had stood next the church and the latter had seemed a very romantic building to young Fabre, first, because he was not allowed into it and secondly, because he had heard that a strange unknown subject was taught in it.

"It was a magician's cave," he wrote "On the steeple, a rusty weathercock creaked in lamentation; in the evening great bats flew around the building or plunged under the gargoyles; at night owls hooted on the ledges, under its immense arches a chemist worked. With what satanic mixtures is he engaged? Shall I never know?"

The church was interesting because chemistry was taught in it. Now Fabre did not know what chemistry was. In his college it was never mentioned. He had heard the word, but he connected it "with a man who wore a magician's star-spangled, pointed hat and carried a magician's wand". It was not chemistry only that was left out in that college. Science consisted of arithmetic and a few odd bits of geometry.

"Of physics," Fabre said, "there was almost nothing. They taught us summarily a few facts of meteorology such as the April moon, frost, dew, snow, wind—just so that we could talk fine weather and rain with peasants. They taught us absolutely no natural history. There was never a word about plants, never a word about insects

whose conduct is so interesting; never a word about stones. All these lovely peeps at the world of nature were denied us. Dead-alive grammar was all our life."

He used to climb up to the windows of Saint Martial to try to catch a glimpse of chemistry being taught, but all he could see was the washing-up of the "learned glass" as he called the test-tubes, for his window looked only into an alcove.

"Do let us explore the church!" said Giles with impatience. So, out of the garden they went and turned to the left down a narrow street crowded with traffic, where the footpath was so minute that the dust of St. Martial's wall left its mark on all their shoulders. There was the strange-shaped belfry and the gargoyles that Fabre described; there the massive door that he had in the end been allowed to enter for his first and only chemistry lesson, there, facing them, the alcove and the window he had peered through; there the Gothic arches. But the rest was changed, for the church was now a church again and the benches where the audience had sat to listen to lessons had all gone; so had the retorts and test-tubes and the massive table corroded with chemicals that used to stand where the altar is. The church was in the hands of repairers, but with the permission of the foreman, the four sat on a plank and Penelope read them the story of Fabre's first chemistry lesson.

"Our mathematical professor,"¹⁰ wrote Fabre, "who came twice a week to teach us the rule of three and the properties of the triangle, had the brilliant idea of letting us celebrate the end of term by a feast of learning. He promised to show us oxygen. As a colleague of the grammar school science master, he was able to obtain permission to take us into the famous laboratory and to let us see oxygen with our own eyes. Oxygen! Yes, oxygen, the gas which enables everything to burn; that was what we were going to see on the morrow! I didn't sleep all night.

"It is Thursday, dinner just over. Immediately after the chemistry lesson we are to walk to Les Angles, the dear little village on the river bank. So we are all in our Sunday best—black overcoat and high hat.

"We cross the threshold, not without a little trepidation. I find myself in a lofty nave with a Gothic vault, in an old bare church where one's voice echoes and into which the light filters through stained-glass windows. At the back are vast steps where hundreds of people can sit to listen. Opposite, where the choir used to be, there is an enormous chimney-piece occupying the whole width of the room; in the middle there is a massive table, corroded with chemicals. At one end of the table a tarred box, lined with lead and full of water. I understand at once that that is the vat where the gases are collected.

"The master begins. He takes a fig-shaped

glass. From a twisted paper, he pours some black powder into it. Dioxide of manganese, he tells us, which contains oxygen. An oily liquid, sulphuric acid, a most powerful agent is going to set it free. The retort is put over a lighted flame and connected with the water in the vat. We are to wait till the heat takes effect.

"My comrades press round the apparatus, never finding themselves near enough. They help on the preparation; setting to rights the retort which leans over a little; blowing up the charcoal. I don't like these familiarities with the unknown; I hate people who are always pushing to be in front. I keep in the background, because there are such a number of other things to see. I use my opportunity to have a look at the whole chemical arsenal. What grim-looking names on the bottles! . . .

"Suddenly, BOUM!!! and stamping of feet, exclamations, cries of pain. What's happened? I hasten to the end of the room, the retort has burst, throwing boiling vitriol in every direction. The wall is all spotted with it. My companions, some more, some less, are nearly all touched. One poor thing has got it full in the face, in the eyes. He is shrieking like the damned.

"Helped by one of them less in it than the others, I force him out of doors, get him to the fountain, which is happily near, and keep his face under the water. The rapid washing helps. The horrible torture becomes less and the boy is able

to continue the washing himself. After a fortnight, the doctors were able to pronounce all danger passed. It was a happy thought of mine to remain at a distance. It enabled me to keep my presence of mind.

"What is happening to the others? I go back to the room. It's not a gay sight. The master himself has his garments burnt. He hurriedly gets out of his dangerous envelope. The better dressed of us lend him the wherewithal to return home.

"The rest are coughing with tears in their eyes. Everyone is dipping the tip of a handkerchief into ammonia and wiping the red stains from their hats and coats. A little ink will bring back the black for them.

"And oxygen? Of course we got none. The festival of learning was over. That didn't matter! The disastrous lesson was a great event in my life. I had entered a chemistry laboratory I had seen its curious fittings. What matters in learning is not to be taught, but to wake up. A spark must explode the sleeping explosives. In my mind this spark has just shone. One day I was to obtain the oxygen that ill-luck denied me to-day. One day, without a teacher, I was to learn chemistry "

But, said Penelope, with emphasis, severe eyes on Giles and Geraldine who were looking too enthusiastic about learning chemistry on their own, Fabre says that to learn chemistry without

a teacher is *not* a way he would recommend to anybody. Instead he writes:

"Happy is he whom the example and word of a master guide! He has an easy way before him, flat and straight. The other fellow, a rocky path where he often stumbles blindfold; *he* feels his way slowly into the unknown and gets lost. He has only perseverance to help him—the sole companion of the disinherited. Such has been my lot. I learnt b̀y teaching others, by giving them the scant harvest that had ripened in the desert land dug day by day by my persevering hoe."

CHAPTER VII

The Sunken Lane

FABRE was only a schoolboy himself, aged eighteen, when he obtained his first appointment as schoolmaster at Carpentras. The road there from Avignon runs through flat country, but the mountains in front and to the left make any day beautiful. The car sped along among flowery fruit trees, their white blossom relieved by the pink of almond and peach and that brilliant red Judas-tree which makes the most coloured foreground of all for the misty blue and snowy cone of Mont Ventoux—Fabre's mountain, where he found in one day's walk the flowers that grow in the tropics and the flowers that grow among the arctic snows; so different is the climate of its peak and its base.

Presently Carpentras faced them, a golden city standing high against a rose-red sky and a rose-red circle of mountains. Slowly they took the steep way into the city by its avenue of giant plane-trees while ever and anon the lofty road seemed about to step off into the sky.

It was about half-past six when, asking here and there among the narrow winding streets, they found the *Collège Henri Fabre* by seeing the schoolboys sauntering out of it one by one.

"Oh, yes!" said one. "Of course this is Fabre's College. *C'est notre parrain!* He is our god-father, we are le *Collège Henri Fabre*."

"I don't suppose Fabre thought when he was in it," said Giles, "and feeling rather scared at coming here at all, that boys would be proud of having their school called after him."

Indeed not, said Penelope, for he was just the teacher of the elementary school and terribly looked down on by the very boys of the college or grammar school, not to mention the masters.

When he came here he wished to teach chemistry, for many of his boys came from the country and he thought it would do them good to know of what soil is composed and on what a plant lives. And others would have to spend their lives among dye-stuffs and be tanners and others metal workers or grocers, soapsellers or anchovy packers; just as well for them too if they understood the science of preserving and knew something about soap, chemistry and metals.

But though the college had a science room, his ragamuffins of the elementary class would never be allowed to enter it. *Such* a class it was too! It contained both small boys who couldn't read or write and boys almost as old as himself, who had been sent into it because they were not good enough for anything else. He had to teach them all together in one room. This is how he describes the school:

"I see the court-yard surrounded by four walls, itself a kind of bearpit, where the scholars dispute for a little room under a plane-tree. All around it, doors open into class rooms that are

like wild-beast cages, dark and airless."

"The tree is a horse-chestnut, anyway," said Margaret, who was peering through the passageway.

At that, the *concièrge* or doorkeeper, a delicious, short, stout, old woman in a poked bonnet and large apron, asked them if they would sit in her kitchen till the principal was free. Yes, she had heard of Henri Fabre "*mais oui, c'est notre parrain!*"

"What a robin!" exclaimed Geraldine as the principal entered and Penelope hoped his English was not good enough to catch the words. But it certainly was the best description of the fat, short, sprightly man with curly hair and large, surprised, shining eyes who greeted them with warm welcome.

"Ah! we have not much of Fabre to show you," said the principal, "just his class-room here," and they turned out of the court-yard into an oblong room of a desperate plainness, "and when his plane-tree died of age, I got them to let me replace it with that horse-chestnut you see, so that at least we should keep a plant in memory of our great naturalist. But if you want to know about Fabre, there is a man here who is visited by all who wish to hear of Provence, or the poet Mistral, but especially of Fabre. He is the baker here. Take my card to him and you will hear something."

"Penél," said Geraldine, as they wended their

way to the literary baker, "what happened about the chemistry and the country boys, *did* they get into the science-room?"

No, Fabre knew that would never be allowed, so he determined to try and borrow some apparatus. The principal in those days could not have been nearly as nice as this one, because the only way to persuade him to help the elementary class was by telling him that if they learned chemistry, more boys would come to the class and more boys would stay to hot dinner so that he, the principal, would make more money out of their soup and potatoes.

The argument succeeded and Fabre came to the exciting moment when he himself was to make oxygen. He must have been brave to try it after the accident. But he read his books with great attention and made his plans carefully. First and foremost he determined that no child should go near the apparatus, so that if there was to be an explosion he alone would suffer.

This is his own account of the great occasion on which he met oxygen for the first time ¹¹

"Two o'clock strikes, the boys come in. I make a point of exaggerating the danger. Let each boy go to his place and not move again. That's taken for granted. I have elbow-room. There is no one near me except my server who stands beside me ready to do my bidding at the right moment. Each boy looks on attentively, feeling respectful before the unknown. There is complete silence.

"Soon comes a glup, glup, glup from the bubbles of gas rushing through the water in the tall glass. Can that be my gas? My heart thumps with excitement. Have I really succeeded at the first attempt? We have to see. Blow out a candle and dip it, held by a wire, with its mesh still glowing, into the gas collector. Perfect! The candle lights up with a little explosion and burns with an uncommon brilliancy. That's oxygen right enough!

"It's a solemn moment. My audience is dumb-founded. I am equally so; but more because of my own success than at the lighting of the candle. A flush of triumph is on my brow, my very blood is warm with enthusiasm. But I don't say anything about my personal feelings. Boys *ought* to think their master knows the thing he teaches!"

So you may be sure neither he nor his boys found chemistry very hard after that; only delightful, especially to hear a hydrogen flame sing in a glass tube. The news spread, the class grew bigger, more dinners were ordered and the principal congratulated the new master on his success.

At last the four found the bakery, but not the baker, for Madame, the baker's wife, shook her head with her special intriguing smile, her blue eyes shining into Geraldine's bluer ones, and said:

"No! Bakers sleep in the day, for they have to bake at night. But have you had dinner No! Then go home and have it and come again at nine. Then my husband will be quite free to talk to

you. I am so very sorry, but indeed he must sleep."

Geraldine had lost her heart to Madame. Bakeress or princess, no one could have kinder eyes or understand better how perfectly horrid it is to wait two hours.

At nine they found Monsieur and Madame entertaining the Curé to dinner. The little fat priest pushed his chair back and bowing low to the newcomers said: "Ah! Yes, I go, you come! Monsieur le Boulanger talks all day to people who want to know, people who come to him to teach them Provençal, people on business from the Society of 'Gay Learning' of which he is a distinguished member. Finish your dinner, my friend, pardon my interruption. Yes, children, this Monsieur le Boulanger is the Cigale d'Irlande. Put that in your cap, little Mademoiselle, the golden Cicada of Ireland."

"But . . ." said Geraldine.

"Ah! you do not know!" laughed the Curé. "But you *do* know that the cicada sings, hein? So the cicada sings, a gay fellow, doesn't sing hymns you know. Neither do the poets of Provence—they sing the Summer and Spring and the Earth and Love. Oh, yes! Love! *le gai savoir*, gay knowledge, that is, gay baby, not such stuff as you and I learn in school. So everyone who sings at all belongs to the Academy of Toulouse, the Association of Gay Knowledge, and those, who are honourably elected, have as their badge a

golden cicada and each gold cicada has a name—you shall see our friend's here—he is a true *félibre*, philosopher, poet, ah, yes! *félibre!* baby, good-bye! Don't stay up too late; remember tomorrow's bread."

With that he was gone; and the children sat on high chairs in the shop, gazing in admiration into the dark mysterious space beyond, where they could just discern the great chimney-piece some twelve feet across, which had been the bread oven in ancient times. When they listened, they could hear the purr of the distant electric oven, which, in the hands of a journeyman baker, permitted the master to give them of his time. Then from the curtained alcove they heard chairs pushed back and Monsieur and Madame came. He was a little spare man, very long, very thin, with a square head, grey hair and prominent cheek-bones, a Dickens illustration with his deep-set eyes, his thin legs, carpet-slippers and blue blouse not very successfully tucked in.

He seated himself astride a three-legged stool and offered Penelope a strong cigarette while Madame ensconced herself with her knitting on the bottom step of the little winding staircase; she knew why.

"The golden cicada? Do you want to see the golden cicada?" asked the baker. "Ah! upstairs, *chérie!*"

So upstairs, Madame sped and down came the golden cicada in a fine case. "An Irishman who

wrote poetry in Provençal gave it its name," said the baker "I knew Fabre; I went to see him twice in his home; I have letters from him—*Chéne*, his signature!" And upstairs again went Madame.

"He was a poet. Have you heard his poetry? Ah! this is what I like! Listen to *Le Semeur* the Sower."

And though no one understood a word of Provençal, they were all stirred by the splendid rolling music of it, the grand sound of the words. When the little man gave them its meaning in French, though they understood it better, there was no doubt it did not sound so well. Here is its meaning in English.—Fabre in the poem compares to a bishop giving his blessing in church, the sower of the field in the holy service of sowing seed to feed mankind and make beds for asses. The birds, who sing as the sower sows, are the choir boys; thunder is the organ. As bishops often have high-sounding titles, the sower in his wind-blown rags, is Baron de Thistledom. His service of blessing has also its incense—the scent of flowers; and its light is no mean altar candle, but the sun. The altar canopy is the blue sky.

Then the baker told them tale upon tale of Fabre, tale upon tale of Provence, and fascinating tales of himself, the second poet baker of France of whom they had heard.

"There's a road near here," he said, "a wonderful place to see. I'll take you there to-

morrow. Fabre one morning had a bit of work there, you know, watching a wasp or something of that kind, as he was always doing. There he was very early in the morning, sitting in the sand. Some women happened to pass by on their way to pick grapes. In the evening, perhaps twelve hours later, they came home from their grape gathering. Fabre was still sitting there. "Ah! poor soul," said one to another, touching her forehead, 'he is an innocent, we must set him in our prayers, spending all day watching a stone! Poor soul! Poor soul!'

"Fabre was an old man when I saw him, living in his beautiful garden at the Harmas in Sérignan, a village just north of Carpentras. There all day long he studied insects and commandeered the help of his wife and his children in the work. But you are going there. Perhaps you will see his old blind friend who is still there. Fabre used to read his books to him as he wrote them and tell by the expression on his forehead if the blind man had understood and if he had written clearly. He was a strange old man was Fabre. If he thought you wanted honestly to know anything, he would give you as much time and trouble as you wanted, but if you went just to see a celebrity you would get what you didn't like. The President of the Republic went to see him. 'I don't know,' said Fabre, 'what concern I am of his or what he wants with me,' and though he saw him, he refused to talk to him.

"Have you heard how he taught algebra here? He knew none, absolutely none, really I mean none. But a young man came and asked him to give him lessons. After a little hesitation, said Fabre, 'Come the day after to-morrow and we will begin'. But he was in a tight place, because not only did he know no algebra, but he hadn't got a book and worse still he had no money . . . only . . . guess! Sixpence! Now I don't know whether I ought to go on with this story to you young people. It may put you off Fabre and shock your governess."¹²

"Nothing shocks our *sister*," said Geraldine, sidling closer to Monsieur, "did he steal a book?"

"Not exactly. He used his own key to unlock the science master's door and he *borrowed* a book. Housebreaking that! The book was half a foot thick. He began where the book opened, with, I am told, a bit of algebra which a good brain can understand without knowing what goes before. I expect it would have beaten me and you, young man, but it didn't beat Fabre. He gave his lesson when he said he would and was able after that to keep a lesson ahead of his pupil. From that time on he took to mathematics."

"How foolish!" exclaimed Giles.

"He wanted to take his degree so that he might teach in the *lycées*, or secondary schools, and universities and make more money; for he was thinking of marrying.

"There was living in the school buildings in

the room next door to Fabre, a quartermaster, who was working hard at high mathematics and making nothing of it, though he thought he was getting on very well. Fabre asked him to give him a helping hand and the former soldier said he would. But very soon Fabre found that it was he who was doing the teaching. The subject suited him, not that he liked it as much as Latin poetry, and certainly not as much as studying beasts, but it helped him, he said, to think clearly. And, to make a long story short, he soon passed his degree examination and became a professor.

"But now I am going to tell you about another kind of lesson Fabre learnt from the boys and what came of it.

"One afternoon a week the boys used to go out into the fields round about taking measurements and Fabre noticed how they often stopped and bent down. Perhaps they were observing something carefully? Not they! They were using straws to suck honey from the wild bees' cells, solitary bees who build cells of stone, in the ground. Fabre learnt how to eat honey, but he also learnt to study the mason bee. To-morrow you shall come with me to Fabre's chief laboratory the famous *Chemin Creux*, or sunken lane."

The next day was very hot; the little baker led the children down the steep steps by which the people of Carpentras descend to the plains. Along the blazing high road they made their way,

almost cowering away from the sun into the shade of any chance bush. Then they turned up a lane, past market gardens and a house on the left which was pointed out to them as standing in the garden where Fabre met his wife; but the house has been rebuilt.

At last they reached the sunken lane, a most peculiar place. High sandy banks, overhung with trees, towered above them on either side. And yet the tropic sun gleamed down through the narrow opening at the top as if concentrated on that very spot. You seemed to be walking in an immense cloven drain and to glimpse the blue sky at the other end through a curved frame. The crumbling soil was scored everywhere with narrow galleries and along those Fabre had chased his little beasts.

"It was down these identical rocks that the digger wasp's threads of earth hung," said Geraldine in a hushed excited voice. "And there is a sea green beetle, how Fabre would have loved it!"

"But never think," said the baker, "that he found it easy to work here. The insects he was studying were not always at home. When they were, and he had perhaps a special piece of luck and the insect was just on the point of revealing some secret to him, a party of children or soldiers would come laughing along, perhaps tread unawares on his insect or on his laboratory and put the shy thing to flight. Or the passer-by would

stop and watch him and ask him questions, or even mistake him for a gold digger or worse still, a wizard working evil charms. Once the rural policeman arrested him. What for? Oh, just for wandering about in a suspicious fashion—doing nothing, nothing explainable that is.”

“One day, Fabre came here to watch a fly. It was a hot day at the end of summer, hotter than to-day, a broiling day. He knew that fly, but he did not know *all* about it. Up in those sandy banks the mason bees make cells of rock in which they enclose their grubs and their grubs’ food in what they think is perfect safety. The grub *should* be safe, for it is shut in between hard stone walls; but Fabre had seen the grub in its unbroken cell preyed upon by another grub, a fat fellow who ‘kissed’ the juice out of the bee’s grub till it was no more than an empty skin. Now, how did the fly’s grub get into the bee’s cell? That was what Fabre wished to know. He came here to try to find out. He watched the black fly flitting from point to point up there. In the broiling weather he clambered up to one of the points and peered at the spot through a magnifying-glass. Not a sign, nothing. Did the fly lay an egg each time it paused for the inside of a second? Fabre thought so, but there was no egg. For a whole afternoon, and don’t forget the heat, he followed those flies about, peering at the earth with his magnifying-glass. But never an egg did he see.¹⁸

“He wasn’t surprised, however, that he hadn’t

seen the eggs that hot afternoon, tired out and with aching eyes; because later on, when he did see them, in his study, they were so small, so colourless, that it needed, not a magnifying-glass, but a microscope to reveal them.

"Yes, the fly certainly laid its eggs on the ground but it never went inside the bee's cell and the fly's grub was too fat and too weak to get inside either. Yet it was *inside*. Now can any of you guess that riddle? After the bee's egg had been plastered up in a stone case, the fly laid its egg on the ground outside and yet the fly grub ate the bee grub *inside* the cell!

"Fabre set a lot of little boys to watch flies and to bring him a bee's cell with flies' eggs on it, but they never found any. They brought him plenty of bee's nests—not hives, for this is not the domestic bee, but the solitary mason bee we are talking about. Fabre's room was littered by tiny masonry. He opened those cells; in each, was a bee's grub, nothing more. He felt the mystery was going to remain unsolved. Then one day as he opened a cell, he thought he saw something move on the bee's grub. No? Yes! The magnifying-glass showed an almost invisible thread of almost no length at all, but a very active thread that walked by humping its back like a caterpillar. Fabre had found it out. This was not the fly's grub; but the thing that was going to turn into the fly's grub. Clever! The fly's grub could never get into the bee's cell. So the fly laid an egg

out of which would come a thing that could do its own walking and explore the ground till it came across a bee's cell. Then, having found a cell, it could use its extreme slimness to slip through the spaces in the carefully made masonry. Even an earthenware jug lets water ooze through! Where water could get, this thread could get. Also, it was so made that it could live for fourteen days without food. That gave it time to wriggle its way through many porous places till at last it found itself on the bee's grub. Then it changed its form, grew fat and motionless, developed a sucker and sucked the bee's grub dry. So many tribes live on other tribes.

"And before we go home, here is another adventure that happened in this lane. Fabre was wanting the nest of a special kind of bee, but the swarm was in a mighty cloud at its own front door.

"To steal a bee's house under the sting of its thousands of inhabitants was his plan. Even he shivered at the prospect; but the searcher after knowledge may not be afraid. He buttoned up his clothes tightly, entered the swarm and began hammering away at the house. The humming of the bees increased in ferocity.

"His first broken piece of earth proved to have no bee cells in it; he had to return to the charge. No one stings him. There he stands in front of the building bees, spilling their honey, unfortunately, sometimes destroying their babies, rousing

them to even more wrathful humming, but receiving not one sting. The country folk passing by say in our Provençal: '*Mé moun bel am li-z-avé down escounjurado que vous poughioun pas.*' 'But my good friend you have bewitched them that they don't sting you.' It was Fabre's first experience of a fact he afterwards proved: that only the hive bees and wasps sting in self-defence "

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CHAPTER VIII

Scorpions

AND now, said Penelope, when they were all sitting in the cool hotel lounge drinking iced lemonade and eating the far-famed crystallised melons of Carpentras, since, whatever Geraldine says, we can't follow Fabre across the sea, I will tell you what happened when he left Carpentras and went to Corsica. He had taught himself, as you have heard, higher mathematics and chemistry, and without going to the university, had taken his degree. The reward for that was the post of Professor of Physics and Chemistry at Ajaccio, the capital of Corsica. Now that island, from whatever point of view you take it, is an enchanted and romantic place full of beauty and bandits.

Fabre did not mention the bandits, but he was keenly alive to the rest of the wizardry of the place: its wild mountains, its dragon-blue sea, its massed flowers, so lovely and so rare, even its delicate and exquisite shells washed up upon its shores. He meant to work at mathematics and school teaching, but the very winds whispered him away to the haunts of urchins and tarantula, sea-urchins and poisonous spiders. But a man like Fabre had often disregarded the winds; they are wild, unruly freedom lovers at best. He little thought that a serious professor would come

and join forces with the wind to get him away from serious mathematics. To the island there came about the year 1850 one whom the French Government had ordered to collect the Corsican flowers. Professor at Toulouse he might be and far-famed, Mr. Moquin-Tandon, but in Ajaccio there was no empty hotel bedroom for him. Fabre offered him a bed in his lodgings, a room overlooking the sea and such poor food as the simplest islanders ate, lampreys, turbot and sea-urchins. So the two made friends and wandered over Mont Renoso together, making acquaintance with flowers unknown to the common walker: the silvery everlasting and the downy marguerite. Then, when they returned to the sea-urchins, Moquin-Tandon lent the winds his voice and said: "Leave your mathematics! No one will take the least interest in your formulæ. Come to the beast, to the plant; and if you have, as I think, real fire in your veins, you will find that men will listen to you."

And so saying he gave Fabre the second lesson of his life, a lesson in zoology.

"You must study beasts; I am going to show you how," said Moquin-Tandon. And, armed with sharp scissors, borrowed from the household work-basket, two needles hurriedly stuck into a twig, and a deep bowl of water, he showed him the anatomy of a snail, explaining by a sketch, as he did so, the make-up and working of its internal organs.

But Fabre did not stay long in lovely Corsica. there happened to be a little beast there which was not his little beast. It was to belong, though nobody dreamed it then, to an Englishman called Ronald Ross, who would study it as Fabre studied spiders or scorpions and save thereby millions and millions of men's lives. Meanwhile it—the malaria mosquito—bit Jean Henri Fabre and gave him that terrible illness, malaria, from which in those days there were only three escapes: death, luck, and to leave the country. So, fortunately for us, Fabre returned to Avignon, to become a lecturer where he had once been a pupil. This is a surprise for you, for now we also must return there, starting along the road to little quiet Pernes.

But that charming little white sunburnt village was not quiet when Fabre lived in rooms on the road that leads to it. He was doing mathematics, thinking hard, everything quiet around him, when suddenly:¹⁴

"Brrroum, brrroum, brrroum! . . . It comes nearer, it gets louder! Curse *Chinese Pavillions!*" he cries. "Let's explain. I live in the suburbs at the beginning of the Pernes road to be out of the noise of Carpentras. Ten paces from my house has appeared a garden tavern with the inscription: *Chinese Pavillion*. There on Sunday afternoons, the boys and girls from all the farms in the neighbourhood come and dance. To attract clients and increase the sale of refreshments, the

master of the dance closes the Sunday hop with a lottery

"For two hours beforehand, there is a trophy procession preceded by drums and fifes. Brrroum, brrroum, brrroum. . . . It's under my window, it's in the house. . . . Till nightfall the ophicleides will bellow, the fifes will whistle and the cornets din. In the midst of such a Kaffir orchestra, you can guess what will become of mathematics! Let's be gone! A mile away I know a lonely, stony desert that the locusts and the wheatear love. I take my book, a few pieces of paper and a pencil and am gone to that solitude. Oh! beautiful silence!"

As the car left Pernes behind and began to pass through a land of lonely, sandy hillocks, covered with thyme, Margaret suggested that it was probably Fabre's *solitude*.

"It strikes me," said Giles some time later, "that our sister is showing her special genius for losing us on a perfectly straight road! There's a big bridge ahead. We are going to cross the Rhone and yet Pernes, from which we have come, and Avignon, to which we go, are both on the left bank with a straight road between them."

"The last sign-post said Villeneuve, Remoulins, Nîmes," remarked Margaret.

Villeneuve! exclaimed Penelope. That is really luck! Fabre used to go out to Villeneuve from Avignon to collect centipedes. He was writing a book about them as part of his examination for

the doctorate. While he was looking for centipedes, he met his first Languedoc scorpion, a very nice beast for our next story, but, on the whole, someone ordinary people would rather avoid meeting.

*The Tale of The Languedoc Scorpion*¹⁶

"I would raise a stone," writes Fabre, "and there he was, horrid hermit! His tail curved over his back, a drop of poison at the end of his spear and his claws spread out at the entrance of his hole!

"Brr! Leave the dangerous beast alone! The stone fell back. They are real hermits, passionate lovers of solitude. Never have I met two under one stone; or to be more accurate, when there have been two, one has been eating the other. They are eight or nine centimetres long and the colour of dead straw. Their weapons are front claws and tail. With the first, they clutch the enemy and hold him motionless, while the tail, curved right over the back, strikes and poisons him.

"They have eight eyes, two in the middle of the hideous thing that serves for head and chest in one, and the rest arranged three by three over the arch of the mouth, but all eight look sideways. So that the scorpion, in spite of many eyes, is short-sighted and squint-eyed and has to move by feeling his way like a blind man."

It was not, however, at Villeneuve, but many

years later at Sérignan that Fabre made his real study of scorpions. He caught them by the tail with pincers, forced them head first into a twist of strong paper and carried them home in a tin box. There, he arranged a portion of his garden to please some and others he caged. But those in the garden fled and those in the cage refused to be happy and well in so small a space. He only managed to keep them by building them a palace of glass. Even from that they began to escape; and remember they were dangerous. The glass walls of their palace had to fit into wooden corners. The scorpions climbed up the wood! Fabre tarred it. They escaped. He oiled and soaped, that did not worry the scorpions. He covered it with glazed paper, which puzzled the fat ones, but the thin climbed even that. At last he covered the glazed paper with soot and then no one reached the top and liberty.

The palace had a floor of sand with twenty-four grottoes made of broken flower-pots; between the grottoes there was space for long corridors and walks. The captives began to dig at once under the potsherds to secure themselves a shady house. They stood on their fourth pair of legs and used the other three pairs for digging. Scorpions never use their long arms to dig; those are reserved for fighting and feeling their way. As they dig, they sweep away the rubbish with their tails and if it does not go far enough to please them, they go at it again till it does.

Scorpions are very good at fasting. Fabre at first expected, when he visited their homes, to find the remains of an ogre's feast; he found instead the crumbs of a hermit's fast. If he offered them dainty bits, they flicked them away with their tails like the dust. From October to April they eat nothing. Towards the end of March he has seen them nibbling a tiny morsel.

"I try them," he writes, "with the field-cricket—fat and melting like a pat of butter. I put half a dozen of these in their cage with lettuce leaves to console them for finding themselves in the lions' den. The singers seem careless of their terrible neighbours; they sing and munch their salad. If a scorpion walks by, they look at him; they point their delicate antennæ at him without other sign of fear at the passing of the monster. He, the monster, retires as soon as he sees them; he is afraid of making a mistake with strangers."

But when the scorpion met a food he liked better, a beetle to his taste, the story was different. He advanced, the beetle remained still. "It was not a hunt," said Fabre, "but a plucking—no haste, no struggle, no movement of the tail, no use of poison. With its two-fingered arms, the scorpion snatched the tit-bit; held it to its mouth, and, without changing position, devoured it. But the live prey objected, struggled, and then the tail curved forward right over the mouth and speared him. He was thenceforward motionless while the feast continued. The scorpion touched him from

time to time gently with the end of his tail, looking, for all the world, as if he were taking mouthfuls with a fork. After a few hours the dinner was done and the scorpion used his fingers to take the remaining bits out of his mouth, like an old man picking his teeth. He would not eat again for a long time.

"But in May, when mating time comes, this frugal fellow becomes a greedy-guts. I have often found him—but it is always her—eating scorpion as if it were any ordinary game. A stomach must be very yielding to take in a dinner as large as the diner."

There were times in his experiments when Fabre teased some other large insect into attacking a scorpion and the scorpion, who is generally a coward, into repulsing the attack. The scorpion always won and then in the glory of victory, ate his adversary. But, let us repeat, except for a habit of eating their husbands and an unusually aggravating enemy, scorpions are small eaters.

In the course of his experiments also, Fabre found out a strange fact about the scorpions' poison. All the insects, great and small, died when stung; but the worms that in the future were going to turn into those insects lived quite unaffected by the stinging. Speaking of the silkworm, he says, "the worms have a fine skin; so that each time the scorpion's spear plunges in, they bleed. The little table, where my curiosity makes me commit these barbarities, gets covered

with blood, like drops of liquid amber. Yet, when they are put back on the mulberry leaves, the wounded worms begin to eat with their usual appetite and ten days later are weaving perfect cocoons. From those cocoons come moths who will die for certain from a single scorpion sting".

You remember that the palace of glass had long sandy walks. Now you shall hear why, in Fabre's own words:

"Spring returns. From the middle of April, every evening, at dark, between seven o'clock and nine, there is a great stir in the palace. What seemed a desert by day, becomes a scene of rejoicing by night. As soon as supper is over, the whole family goes to look. A lantern hanging in front lets us watch events.

"It's our amusement after the day's work; it's our play. In this theatre, where the actors are insects, the plays are so interesting that immediately the lantern is lit, we all, big and little, come and take our place in the pit—all, even Tom the dog.

"Near the glass, on the sand in the lighted zone, collects a numerous scorpion company. Everywhere else, lonely scorpions promenade and at length, attracted by the light, leave the shade and join the lighted dance. The newcomers mix in the crowd, while others, tired with the excitement, withdraw into the shadow, rest a few minutes and return to the play.

"It's quite an attractive saraband, the dance

of these horrors gone mad with joy. They come out of the distance—slowly and seriously they come out of the shadow; suddenly, with a rapid little run, like a slide, they join the lighted crowd. They are as agile as tripping mice. One seeks a partner; she is gone like a flash as soon as he touches her fingers, just as if they had burnt one another. Some of them roll about together, then scamper off in confusion; get back their assurance in the shadow and return.

“Sometimes, there is quite a lively tumult. The place is aswarm with claws, with snatching fingers and curved tails. In the scrimmage two points light up and shine like carbuncles. You would take them for flashing eyes, but in reality they are two facets in the forehead, polished to such an extent that they act as reflectors. They are all in the hubbub, big and little; you would say it was a fight to the death, a general massacre, and it is only a mad game. The group separates; everyone takes a rest and there isn’t a wound or even a sprain among them.

“Here they come back, they pass and re-pass, they come and go, often meeting face to face. Someone in a hurry walks on someone’s back. He doesn’t mind. The worst that happens is a cuff from a friend, a tap of the tail—that’s their way of shaking hands.

“There is something better than this mixture of claws and brandished tails; sometimes they put themselves into most original positions. Face to

face and fingers together, two of them stand on their hands and raise their whole body, tails and all into the air. Then, with those tails they tickle one another, rub them up and down, hook them together, undo them, hook them again and so on. Suddenly, the friendly pyramid falls down and each one decamps in haste.

25th of April, 1904 Holà! What's this I haven't seen before? Two scorpions are face to face, hands held out and fingers clasped. Knight and lady they are; she is fat and brown, he is thin and pale. With measured step and their tails prettily curled, the pair stroll before the glass. He is in front, walking calmly backwards. She follows obediently, held by the tips of her fingers and face to face with him who draws her.

"They halt in their walk without changing their position; they go on again, here, there, from end to end of the palace . . . they loiter, they dream, they exchange glances. Just so, on a Sunday evening in my village the young people loiter along the hedgerows.

"They often change their direction and it is always he who decides. Without letting go of her hands, he makes a graceful half turn, places himself at her side and caresses her spine with his tail.

"I watch unwearied for full an hour. At about 10 o'clock, something happens. He has arrived at a potsherd that seems to please him. He lets go one of his lady's hands. But holding hard with the other, he digs with his feet, dusts away the

sand with his tail until a grotto opens before them. He goes in and gently, little by little, he draws his patient lady in after him. The pair are at home. . . .

"To the happy story of the evening succeeds the atrocious tragedy of the night. On the morrow, our lady is under the potsherd all right. Her little husband is there too, but slain and a little of him eaten. His head is gone, an arm and two legs. I carry the corpse outside. All day the lady hermit refuses to touch it. But at night, coming out, she finds the dead on her path and carries him off to give him honourable burial, that is to say, to finish eating him."

If the scorpion is a disagreeable wife, she is a charming mother. Fabre found her one morning with all her family; some had scrambled on to her back, but others were still in their transparent egg.

"The little creature was condensed into a grain of rice and had its tail folded against its stomach, its claws against its chest and its feet against its sides, so that nothing stuck out. On its front, dark spots showed where the eyes would be. The little thing was floating in a drop of liquid enclosed in the tenderest possible skin. I see the mother gently bite this skin, tear it, take it off and eat it. She is as gentle with her new-born baby as a sheep or a cat . . . there go the little ones, carefully washed, quite clean and free. They are white. As each one's toilette is finished, he climbs

on to his mother's back by her claws which she keeps on purpose lying flat on the ground so that the climb may be easy.

"On a hot afternoon the sight of mother scorpion and her little ones is almost as pretty as that of a hen and chickens. Most of the family are on the ground close around mother, some are climbing up her tail, some are camped at the top and seem to be enjoying watching the crowd from their lofty seat. Other acrobats clamber up and take their places from them. Everyone wants the view!

"Around the mother it is swarming with children. Some creep underneath her so that you can see nothing of them but their shining black eye-points. The most lively prefer her feet. Those are their gymnastic apparatus. On them they do trapezium exercises. Then when they are tired, the whole troupe get back on to their mother's spine and all is still."

CHAPTER IX

The Sacred Beetle

"When God had finished the stars and whirl of coloured
suns
He turned His mind from big things to fashion little
ones,
Beautiful tiny things (like daisies) He made, and then
He made the comical ones, in case the minds of men
Should stiffen and become
Dull, humourless and glum "

HARVEY

THE words "a walled city" have a different meaning for those who have seen Carcassone, Aigues Mortes and Avignon and for those who have not. The walls of those cities have not crumbled or covered themselves with moss or lost themselves in the city's heart like the walls of York or Chester. They stand lofty, as high as churches; they go on and on unbroken; at regular intervals their round towers still strike wonder and fear into the watcher; at regular intervals too their deep, shade-haunted gates are still the entries into the town. Through one of these Penelope took her car with careful caution, on account of the traffic on the other side, and came out into a brilliant clarity of sunshine which is the special privilege of the South. Under the bridge, the tremendous Rhone poured its rapid waters brimming from the early melting snows. To the right, the lovely broken bridge of ancient Avignon

whispered that there are "sermons in stones" and tales in everything. Ahead the great main road ran to Nîmes and beyond to Spain and the Pyrenees. But the children that morning were looking for a big umbrella and a dung beetle. They therefore turned to the left. It was not far before Penelope slowed down. On the one side all was mingling waters, a great expanse of gleaming, sun-smitten river, for there the big Durance flowed into the swollen Rhone. On the other side there were barren stony cliffs covered with ilex scrub.

This must be Issarts Wood, she said.

"Wood!" exclaimed Giles. "Where? This is scrub, not as high as one's head, not a bit of shade."

Here, said Penelope, when Fabre came back to be professor at Avignon, he used to come in his free time to watch his beasts, and if it is as hot as this in April, you can imagine what it was like in July and August. He had no shelter from sun-stroke but a great umbrella under which he would sit for hours. And sometimes he would have to lie flat to get the shade of a small bank, and even, he has cooled his poor burning head by thrusting it into a rabbit burrow! Up that cliff, to the right, is the village of Les Angles.

The very flies used to take refuge under the umbrella, and once Fabre was startled by various noises like nuts dropping on the silk. However it was nothing but wasps suddenly landing to

fetch the flies for dinner. They had discovered the excellent larder and Fabre had an observation laboratory all handy.¹⁶

The children wandered a little over the arid ground, with its loose stones and sweet-scented thyme; but the notice that it was all "*champ au tir*" (shooting butts) made them timid and they sat down instead to listen to Fabre's adventures in this place that he called his little *Arabie pétrée*, or stony desert.

Fabre tells us, said Penelope, that the school children used to come out here on Thursday half-holidays to search the ground for spent bullets which they sold by weight, quite a quantity for a halfpenny or so. One day he wanted them to find him a sacred beetle's ball with a worm inside, and they stood round him in a circle munching their apples while he explained to them what they were to do. A whole franc they were to have for a ball with a worm in it; balls without worms to count nothing. He tells us how their eyes sparkled at the thought of so immense a sum.

"I had just upset their ideas of value by putting such a mad price on a bit of dirt," he said.

He gave them a few halfpence of earnest money and the search began. But never a ball with a worm in it did any of them find in two weeks. Fabre paid the hardest workers for their work, but for success he had to depend on himself. The story of why he wanted a ball with a worm in it is:

*The Tale of the Sacred Beetle*¹⁷

"They are handsome fellows fit to decorate a collector's box," says Fabre, "on account of their severely simple dress, which is always irreproachably polished, and their odd head decorations. Though the European sacred beetle always wears ebony black, tropical fellows deck themselves in sparkling gold or glowing copper. And all this fine dressing—to do what work do you suppose? A dustman's duties! When cow, horse, mule or sheep inadvertently soils the world, the sacred beetles rush up, one, two, a whole crowd and carry the dirt underground. No wonder the ancient Egyptians called them sacred and even went the length of regarding them as gods! When the smell brings them to a heap of dung, some scratch away the surface; some open corridors to the centre of the mass, seeking special tit-bits; others simply bury the lowest layers there on the spot, some in a great hurry sit down to dinner where they are. But the majority lay in a store on which they may feast for days together in some sure retreat; because, remember, a nice fresh lump of dung is not always to be found in the middle of these stony thyme-scented plains—it's a gift of the gods."

"Who is this trotting up to the heap," writes Fabre, "rather afraid he is late, his long legs advancing with a quick awkward movement, his little antennæ opening their fan—a sign that he

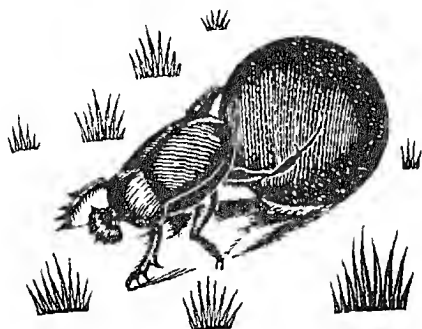
is both anxious and greedy? It's himself, the sacred beetle, dressed in black, the biggest and most famous of the dung beetles. He has a broad flat edge to his head, fortified with a semi-circle of angular projections. That's his digging and cutting tool, the rake that separates and throws out any vegetable which he does not find good to eat, that chooses out the best stuff and rakes it together. Beetles know how to choose. They are not over-particular when they are collecting food for themselves; but if it is for their children they are most scrupulously exact.

"Look at him at work! To right and left go those curved front legs of his with edges like saws, sweeping a semi-circle free for himself, gathering armfuls of food and pushing them backwards under his tummy where his four other legs, curved into arcs for the purpose, turn the food over and over till it becomes a ball. Watch that surprising ball grow till it is many times the size of the beetle and often as big as an apple!

"Next the ball has to be taken home. The beetle embraces it with his two hindmost legs, uses the next two as supports and walks backward on the front two, pushing the ball behind him, his head touching the ground. Those two back legs keep the ball in its place and move it along with gentle pushes first with the right and then with the left. He doesn't get home without accident. There is a hill in the way—Sir Beetle—or is it Milady?—slips, and the ball rolls

to the bottom of the valley turning the pusher head over heels on the way. She picks herself up and harnesses herself once more to the load.

"Why doesn't the silly go along the bottom of the valley where there is a good path? Not a bit of it, she climbs the hill again. Well, if her house is on top, perhaps she has to, but she might take the little gentle path. Not even that! If there does happen to be a really steep hill which it is not possible to climb, Madame Beetle is sure to climb it. Sisyphus had not a harder task. One



wonders how such a mass can be persuaded to balance on the slope. Ah! a false movement brings to nought all that tiring work; the ball rolls down again and the beetle after it. Again she goes up, and this time carefully avoids the grass root which caused the last fall.

"Carefully! carefully! the slope is dangerous, a nothing can destroy everything. There she goes, her foot has slipped on a polished pebble,

pell-mell, ball and beetle to the bottom again! Ten times, twenty times she will fail, but she will never give in till the ball has been pushed home."

Sometimes she gets a helper. People, who have not watched as carefully as Fabre, will tell you that beetles have kindly characters and that when one beetle finds herself in trouble, with her ball stuck in a pit from which she cannot extricate it, she will go and fetch an ally to give her a hand. But Fabre, the "incomparable observer", as Darwin calls him, draws other conclusions from what he has *seen*. He has often put a ball and its beetle into a pit, but never has the beetle gone to fetch a friend. No, when an industrious beetle has made a splendid ball, some lazy newcomer, who has only just begun his ball, slips away from the crowd and lends the first a hand unasked—and that not for kindness, but in the hope of sharing the meal or even of stealing the ball. Fabre has seen this newcomer, instead of helping to push or to pull, calmly sitting on top and being pushed. He holds on so firmly, that when the ball rolls down the slope, he goes with it, and adds to its weight when the original owner is pushing it up again. Or he even, from his vantage point on top, fights the owner, trying to become sole possessor of the beloved ball. Yet he does sometimes help too, but always to get a meal.

The beetle's den is a hollow as large as a fist with a short gallery leading to the open air. Once

inside, the beetle shuts the door by sweeping over the opening rubbish which she has left there on purpose. Then, shut securely in with none to disturb her, she sits down to the feast and eats without stopping.

"To see her thus," writes Fabre, "absorbed on the edge of that massed immundity, you would say, almost, that she realised her duty as cleanser of the earth; and that she did her work as if aware of that wonderful chemistry, which, out of dirt, creates flowers to be a joy to the sight and beetles' wings to adorn our spring-time lawns."

"And as this wonderful change has to happen with the least delay possible for the sake of the general health, the sacred beetle is endowed with a power of digestion beyond everything else."

Fabre watched one for twelve hours who ceased not all that time to devour. And all that time, as the food in front of the little beast was eaten and went down, behind, just as continuously, it re-appeared in a long black cord, three or four millimetres of it every 54 seconds. In twelve hours the trail of the food that had passed through the beetle was 2 metres, 88 centimetres, or about 3 yards long.

One day a shepherd brought Fabre a pear, a beautiful shining brown pear which he said he had found in a beetle's den. The children stood around begging it for a toy. The shepherd said he had found an egg in another pear which he had crushed by mistake, an egg about the size of

a grain of wheat. Fabre could scarcely believe it, for he had been expecting all the time to find the beetle's eggs in a round ball, seeing that he had never seen them make anything but round balls. No, he could not open it to see, because he might never find another. He had to wait till morning and go with the shepherd to try and find more pears like it. And he was not disappointed. As the shepherd raised the earth with Fabre's little trowel, there in the hollow lay the pear. Now to find the egg, in the middle? Or at the end? The story is long; again you must read it for yourself.

Here is very briefly what Fabre learnt from the pear. When Madame Beetle is thinking of her baby grub, she chooses the very best and most nutritious dung, the cow's. She makes the ball with infinite care, knowing all the dangers she has to provide against. For instance, if the drought gets through as far as her den and the grub's ball dries, the grub will find it impossible to eat; so the beetle polishes and hardens the surface till it becomes like a jar to keep the food inside soft and moist. At one end of the ball, she makes a small round depression with the edges standing out much like the mouth of a humanly-made jar. In fact, a picture of the pear at that stage looks like a man-made jug. She polishes the inside surface of the depression and in it she places some beautifully soft, almost liquid food which she has, like the pigeons, first

chewed and spat out. In the middle of that she lays her egg and then draws the edges together smoothly, but leaving room for air to pass in. Lastly, she gives the whole the beautiful form of a pear. When the grub awakes he will find that he has plenty of air through the gathered-up end and just the food he needs to begin on. If he had awakened in the middle of the pear he would have been suffocated. When he is older, he eats into the rounded part of the pear, but if it has grown too hard for him, escape is open behind.

To see these things happen, Fabre put the beetle and her food in a glass box in two storeys with a sloping platform from one to the other. Over the bottom storey he placed a removable shutter. By opening that rapidly he got glimpses of the beetle at work before she escaped upstairs to the dark, which she always did at the faintest approach of light. But with the grub he was not so successful. He broke a slit in the food ball to see that young thing at work and was surprised to see the slit instantly mended by master grub. As often as Fabre made a hole in the polished outside of the ball, the grub threw at it some of its own excrement which mended it completely.

It was those balls, the pear-shaped balls, which the children on these rocks never found, and for a very good reason—they are always underground. The beetles do not roll their babies about, but make the nursery balls in the dens and leave their babes in utter stillness. If all goes well, the

egg hatches out into a grub who becomes a hump-backed, fat, caterpillar-shaped creature, who transforms the stored food into himself until he fills the whole pear. After three or four weeks he casts his skin and becomes a beautiful nymph with "long wings folded beside his body like a sheath and front legs bent under his head. He is almost transparent and honey-yellow like a statue cut in amber". For four more weeks that is his form; then he becomes a beetle with "a dark red head and chest, a white abdomen and transparent white wings slightly tinged with yellow. This magnificent costume in which are associated priestly white and cardinal's red is only temporary and gradually turns to ebony black. In another month the beetle is ready to break through the shell of the pear and to make his way to the upper air. If a little, even a little rain, comes to help him with the hardness of his walls he is lucky and he uses his first day in the light warming himself in the delicious sun".

"What is he thinking," asks Fabre, "while he takes his first bath of radiant light?"

CHAPTER X

Visitors

"Il donna ici les cours publics de sciences, organisa le museum Requien, fit ses decouvertes de chimie industrielle, et reçut la visite de Victor Duruy, Stuart Mill, Pasteur."

THE morning after their visit to Les Angles, the Yew Tree family happened to be passing the church of St. Martial, when Geraldine discovered the inscription on the door which none of them had seen on their former visit. From 1852 to 1870 Fabre lived in Avignon and himself lectured in that same church where he had received his memorable chemistry lesson. Penelope translated the inscription: "Here, he gave public lectures in science, organised the Requien museum, made discoveries in industrial chemistry and received visits from Victor Duruy, Stuart Mill and Pasteur." She was just about to explain why these visitors were so famous as to be mentioned in an inscription, when her banker friend passed, and, lifting his hat said: "I am sure if you want to know more about Fabre, his nephew, whose office is near-by, will be glad to talk to you about him."

The four needed no further invitation, but their hearts failed them for shyness as they faced the great marble staircase of an ancient palace and were told that M. Henri Fabre was upstairs.

So the three sat respectfully in the cool shade on the lowest step and sent Penelope alone on the exciting search. When she returned with them to the sunny gardens she had a great tale to tell.

No, Jean Henri's nephew and godson was not like his uncle's statue; but he was just as delightful. He was short, with brown eyes of a very glistening and very kind variety; probably those were just like Jean Henri's; he was kindness itself, with the most enchanting French manner and he had told her so many stories that she did not know where to begin. First, it was quite visible that Fabre was a hero to his own family. M. Henri had taken her to see all Fabre's books in his bookcase and shown her two medals; one where Fabre was shown studying with a magnifying-glass a plant with a cocoon on it. The reverse was quite enchanting, a view of his garden, the garden we are going to see at Sérignan with Mont Ventoux behind and plane-trees in front and insects in the foreground. It was quite a small medal and yet even the tiny insects were beautifully cut.

M. Henri had himself attended Fabre's lectures in the church, and imagine it!—they were so popular that it was necessary to have police to keep back the crowds who wished to go to them. People were attracted partly by the interest of his subject, but also by his wonderful eloquence, an eloquence which he never strove after, but

which arose naturally from his deep knowledge, his accuracy and the great clearness of his mind which expressed itself in his crystal clear language. Happily, we have his *Souvenirs* where everyone, who knows French, can still hear and love that beautiful eloquence.

"Fabre," said his nephew, "was a 'well of knowledge'. He lived to be ninety-two but almost the last thing that he said was: '*Il y a tant à faire*'—there is so much to do!"

When M. Henri was a boy, he used to learn his uncle's poems by heart and once, on his birthday, instead of a present, he recited them to him in Provençal. The old man was so delighted that tears of emotion poured down his cheeks and the pleasure the nephew was able to give has remained one of his best memories, a joy and happiness for all his life.

In one of his rooms there was a beautiful picture of Fabre at work in his study; he is looking up and his face is full of energy—a loving and beautiful face. Another picture was of Fabre, his wife and his son, half buried in earth watching insects.

He, like the baker of Carpentras, told how eager Fabre was to talk at length and with great seriousness to anyone who really wanted to know; but to those who visited him out of curiosity he would not say a single word "*Pas un mot*"

Fabre was a great friend of the English

economist, John Stuart Mill, who lived in Avignon. You have probably heard what a wonderful little boy was that same Mill. Before he was eight he knew Greek so well that he had read in that language serious books of history and philosophy.

Mill went to Avignon on a visit with his beloved wife; but because she died there, he bought land and built a house with a window looking out on her grave in the cemetery and there he lived until he too died. He used often to call on Fabre to talk of knowledge and of the education of women in which they both believed. In those days learning was reserved for men; you shall hear later on how punished Fabre himself was for teaching science to girls.

*The Story of Pasteur's Visit*¹⁸

You all know the name of Pasteur, because you have all heard of pasteurised milk. Some day you will know more about the greatest Frenchman of all, who discovered how to conquer some of the germs that bring disease and so saved perhaps more lives than any other single man. One day, quite unexpectedly, he rang Fabre's bell. Silkworms were sick and the French government had sent Pasteur to the south, to find out how to cure them. He had never seen a silkworm, so Fabre was the right person to come to.

"Could you get me a cocoon?" asked Pasteur

"Nothing easier!" replied Fabre. "My landlord is himself a dealer in cocoons and lives next door. If you'll be kind enough to wait a moment I will bring you what you want. I hasten to my neighbour's, where I stuff my pockets with cocoons. On my return I offer them to the scientist. He takes one; turns it over and over in his fingers; with curiosity examines it, as we should some singular object which had come from the other end of the world. He shakes it against his ear. 'It rattles!' he says, quite surprised. 'Is there something inside?'"

" 'Why, yes!'"

" 'But what?'"

" 'The chrysalis.'"

" 'What's that, the chrysalis?'"

" 'I mean the sort of mummy into which the caterpillar turns before it becomes a moth.'"

" 'And in every cocoon there is one of these things?'"

" 'Of course! It's to protect the chrysalis that the caterpillar spins.'"

" 'Ah!'"

So Pasteur went away with his cocoons and saved the silkworms and the silk industry of France.

And Fabre said: "Encouraged by the magnificent example of Pasteur, I have made it a rule to adopt the method of ignorance in learning about the instinct of insects. I set myself stubbornly face to face with my subject until I contrive to

make it speak. I know nothing. So much the better."

*The Visit of the Chief Inspector*¹⁹

Schoolmasters and schoolmistresses are often afraid of inspectors. Even Fabre, when the inspector came into his lesson on graphs hastened to pick out the best graphs of his best pupil to win his admiration. But the inspector was not interested. They called him "the crocodile", so you would not expect him to be very agreeable. But Fabre was really disturbed when the great man put the good school work aside indifferently. What could be the matter?

"Are you a rich man?" asked the inspector suddenly.

Fabre was very poor indeed. He was doing almost as many things as his old schoolmaster of St. Léons to try to earn enough to keep his growing family.

"Poor? That's a terrible pity!" exclaimed the inspector. "I have read your writings. You are a true observer, you care for research, you speak well and write with ease; you would have filled a chair of science with distinction at the university."

"That's just what I am aiming at."

"Renounce all thought of it."

"Have I not the right knowledge?"

"Yes, but you are not rich! To hold a university chair you can be as dull and mediocre

as you like; but you must have enough money to play a public part. Poverty with a professorship spells mere misery."

"Sir, I thank you. I will see if I can earn enough money first to enable me to do advanced teaching."

"That's sarcastic," said Geraldine, her head on one side and puzzlement in her eyes

*The Visit of Victor Duruy*²⁰

Fabre planned to earn the money which would enable him to teach at the university by finding a better and cheaper way of extracting alizarin dye from the madder plant which was one of the chief industries of his district. He had found in his chemical work that it was possible to make a chemical dye, but to put it on the market would have been to destroy the madder industry and throw the labourers out of work. So he kept his discovery secret and worked at improving the madder dye. But just as he was verging on success, the Germans discovered chemical alizarin and all his hopes were dashed. But his work in dyes won him a friendship perhaps as good as a fortune.

One day as he lent over his vats, his hands blood-red with the stuff he was working in, a man with a familiar face came in. Fabre had seen him once and envied the teachers of literature whose inspector he was, for having such a much nicer

man to help them with their teaching than the mathematical inspector. Now the man he would have liked to know, Victor Duruy, had been made Minister of Education under the Emperor Napoleon III and was actually in his laboratory.

"I have just a few minutes left of this visit to Avignon," Duruy said, "and I would like to spend them with you."

"Confused at the honour," wrote Fabre, "I began to excuse myself for being in shirt-sleeves and having these hands like boiled lobsters."

"No excuses!" said Duruy. "I wanted to see you at work, and a workman is always best in his blouse. What are you doing?"

When he had had that explained to him, Victor Duruy asked what Fabre wanted for his laboratory.

"Nothing," was the answer.

"You are different from the rest, who always want something."

"I will accept one thing."

"What?"

"The distinguished honour of shaking hands with you."

"There, what else?"

"A crocodile skin, when one dies at the Zoo. I want to hang it in the roof to rival the old necromancers."

The minister looked round, pausing at the vaulted roof and laughed. "Now I know the chemist," he said. "I knew you before as a

naturalist and writer. I have heard of your little beasts. I should have liked to meet them. Now I have a train to catch—walk with me to the station, there'll be nobody to interrupt us."

So they walked, the two talking of madder and beasts and forgetful of all else in the joy of talk.

An old beggar woman held out her hand and Duruy gave her a gift.

"It's the Emperor's minister who has given you that," said Fabre.

"*Que lou bon Dieu ié done longo vido e santa, pecaire!*" said the old woman.

Fabre translated: "She wished you long life and health, and, as to *pecaire*, it has all the heart's tenderness in it." And he too repeated that wish of good luck to the gentle-hearted minister.

But as they entered the station, to Fabre's horror he saw assembled to honour the minister, the commander-in-chief, the prefect and his secretary, the mayor and deputy, the school inspector and other educational dignities. As the great men bowed to the minister, Fabre said he felt like St. Roch's dog—the dog who used to sit with the saint and share all the bows the pilgrims made to his master.

Then Duruy seized his hands which he was hiding in his hat behind his back and said: "Let me show you these."

"A workman's hands," said the prefect.

"A dyer's hands," said the general.

"Yes," said Duruy, "hands that may help the chief industry of your district and which also use the pen, the pencil, the magnifying-glass and the scalpel. As you seem not to know about that here, I am enchanted to have the pleasure of telling you."

Fabre says he wanted the earth to swallow him up and was sincerely glad that the train left at that moment, carrying away a laughing and jestful minister.

But it was not long before Fabre heard from Duruy again. He received a letter calling him to Paris. Afraid that he was going to be offered another school in the capital, which would have separated him from his dear country beasts, he refused. Then Duruy wrote again: "If you don't come, I shall send my police to fetch you."

When Fabre arrived in Paris, Duruy gave him a newspaper saying: "Read that; you refused my chemical apparatus, you won't refuse that." And he saw that he had been given the greatest distinction in France, that of the *Légion d'Honneur*. Duruy himself pinned on the red ribbon, kissed him on both cheeks and telegraphed the glorious news to his home. Then he handed him an envelope to pay, as he said, his travelling expenses. But in it Fabre found 1,200 francs and when he protested and wished to refuse, Duruy said: "Take it, or I shall grow scarlet with rage and what's more, you have to come and see the

Emperor with me to-morrow. Don't try to escape, remember the police!"

And on the morrow, try to imagine our Fabre being ushered through the stately rooms of the Tuileries by splendid chamberlains in knickerbockers and silver-buckled shoes. What do you think they reminded him of? His beetles, of course, with, instead of wings, brown frock-coats, key-patterned behind. There was present a crowd of people who had done distinguished work: explorers, geologists, botanists, archivists. Fabre had scarcely time to note them when the Emperor entered—a very ordinary man, he said: "Un homme comme les autres," a roundish man, with long moustaches and half-closed sleepy eyes. But for all that, he had to be awake enough to talk to each of these distinguished men on their special hobby or work. With Fabre he spoke for five minutes on the "Hypermetamorphosis of the Meloïdes".

Something for you there to find out, said Penelope with a teasing laugh.

Then all the Emperor's guests went to a State lunch and talked about everything, even the broken bridge of Avignon where everybody dances. The day after, in spite of many invitations to take part in the gaiety of gay Paris, Fabre went home to Avignon, full of hope that at last, now that important people were interested in his work in madder dyes, success was going to be his. By success, you know he meant: to earn just

enough money by madder dyes to enable him to teach natural history in the university and to study beasts.

But, alas, it was just at that moment that the news of the German discovery of chemical dyes reached France. Fabre's discovery was useless and his hopes dashed. But a greater disappointment far was in store for him. Even his work at the school at Avignon was to be taken from him. In his enthusiasm for his beasts he had been giving, as you have been told, really interesting lessons that people crowded to hear as if the lecture-room was a theatre. It was very natural that girls should wish to join in the new excitement and desire to hear this eloquent professor. You will be surprised to know that at that time girls did not go to lectures. Duruy, Fabre's friend in Paris, had made a beginning with the higher education of girls. This was already twenty years after Frances Mary Buss had founded the first Girls' High School in England. Fabre, too, believed that girls should be taught, and his girls' classes grew in popularity. He taught them, as he says, "what air and water are; whence the lightning comes and the thunder; by what device our thoughts are transmitted across the seas and continents by means of a metal wire; why fire burns and why we breathe; how a seed puts forth shoots and how a flower blossoms; all eminently hateful things in the eyes of some people whose feeble eyes are dazzled by the light of day".

These are things that every girls' school teaches now, but in those days they seemed to most people terrible knowledge at enmity with God.

The Powers of the town decided that higher education for girls was a definite sin. The old ladies who owned Fabre's house turned him out of it. He was too poor to move into another. Besides, the old ladies' action was part of a plot to get rid of him. He decided not to resist, but to go. But even the money to transfer his belongings from Avignon to Orange was not there.

It was at the time of the Franco-Prussian War of which you have heard, and Paris was besieged by the Prussians. Fabre's ordinary salary could not be sent to him. In his distress he appealed to Mill to lend him the money. But Mill happened to be in England taking his seat there in Parliament, that famous Parliament of 1870, which said for the first time in English history that all children were to be educated. Mill sent far more money than he had been asked for; sent it by return of post and asked no promise from Fabre that it should ever be repaid. Nevertheless, you will be pleased to hear that it was.

CHAPTER XI

Swallows

"No blazoned banner we unfold
One charge alone we give to youth
Against the sceptred myth to hold
The golden heresy of truth "

A E

It must have been with a very heavy heart that Fabre and his wife and their five children set out by train up the line of the strong-flowing Rhone to find a new home in Orange.

The Yew Tree children, in their speedy little car, along the great highway, with the hottest of April suns and the bluest of April weather, found it hard to believe that anyone could be heavy-hearted. They had scarcely left the long walls behind and were doubting which they admired most—the three-lined highway, snow-capped Ventoux or the rugged Dentelles—when they found themselves passing through the village of Pontet.

There, said Penelope, in the farm of Roberty, a charming adventure befell Fabre while he was still living in Avignon. He used to walk out there to visit his old father, who had been given a home by the prosperous farmer, and one day he watched some potter-wasps try to make their nests in a coat and a hat which the farm hands had hung on the wall while they had dinner. Unfortunately, those young farmers were not so

devoted to little beasts as they should have been, so after dinner they took their hats and coats, shook them and dislodged whole masses of mud which these strange insects had fastened on to them in preparation for their nests. Fabre wished his coat had been hanging on the wall, for he would have left it to the winged builders to see what happened next.



As they approached Orange, the Dentelles, or the lace mountains, were looking just like coarse, giant, grey lace against the sky, because their peaks are of bare, rugged rocks that end in very sharp points. Fabre says²¹ that, near the top there is a cliff so straight and smooth that it is like the wall of some Titan's rampart topped by crenelated battlements. He was collecting flowers at its foot when he saw a flight of "wall swallows", and looking at the cliff wall, he saw thousands of their nests fastened to it. It must have been from living in such places, he reflects, long, long ago, before the walls of human houses were built, that that kind of swallow learned to fasten its nest to walls.

Those swallows reminded him to tell a tale of

a domestic swallow who would insist on making her nest in his room. "I am willing," he said, "to give her up the shed, the cellar porch, the dog-kennel, the wood-house and other outhouses. But that is not enough for her ambitions. She wants my study; the curtain-rod and even the window-sill would suit her. Vainly I try to make her understand, as I destroy the foundations of her building, how dangerous a place a moving window is for the young; how disagreeable my curtains would find her mud and her infants' dirt. I don't succeed in persuading her. I keep the windows shut, but if I open them too early, back she comes with her mouthful of earth.

"Once I allowed myself to be persuaded. She had fixed her nest in the angle of the wall and ceiling over a marble-topped chest covered with books. Knowing what would happen, I moved the books. All went well till the hatching; but as soon as those baby birds arrived, things changed. The six infants became intolerable; every minute: flac! flac! guano on the chest! Constant broom! Constant smell! And then, what slavery! The room was closed at night. The father slept out, and, as soon as the babies began to grow, the mother did the same. Then, at earliest dawn, they were at the window breaking their hearts before the glass barrier. To open to the sad hearts, I had to get up in a hurry, my eyes heavy with sleep. No, I shall not let myself be tempted again."

So they came to Orange (called O-rònge), which once belonged to William of Orange (called Or-inge), and passing under a stupendous wall, that soared into the sky, they asked what it could be and heard that, within, was the wonderful stone theatre the Romans had built. Fabre had gazed at its mightiness every day for the nine years he lived at Orange. For he had chosen a lonely house in the fields just outside the town. And from his window he saw nothing but wide-stretching, flowery meadows, the beautiful, ruined theatre and the hills beyond. As well as the meadows, his house possessed another treasure—an avenue of splendid plane-trees where birds sang in spring and cicadas made music in summer. For nine years, Fabre enjoyed them; but when his landlord cut them down to make a little money, he was too sad to go on living in the house and left Orange.

Orange is a good place for walks and Fabre was a great walker. When he set out he used to look like one of the peasant madder-workers going out to work; for he carried a trowel, a knapsack on his back, boxes, glass tubes, pincers and a magnifying-glass.

He loved to wander over the tableland of Sant Amans, or to climb the Dentelles, or best of all, to make his way to the top of Ventoux. That was not surprising, for it must be fun for anybody to walk from the tropics to the arctic in one day; but for someone like Fabre, who liked meeting

the flowers of Africa and the tiny plants of the North Cape, wild in his own France, the journey was full of adventure. It was sometimes dangerous, too, for when a mist came down on that mountain—and who can be sure of mists?—one's next step might be down a precipice

Fabre and his friends were once lost in a mist on Ventoux²². They had been botanising, picking a flower here and there or examining a root, turning north, south, east or west. When the mist came, they had no idea of where lay the south or where the north. Yet it was important! For the north of that mountain was sheer precipice, but to the south was the mountain hut which meant safety. When the misty rain began, had it come from the south, they asked one another. Yes! When it began. But it seemed then to be coming from everywhere, and indeed on mountain-tops that is the custom of mists and of winds. They have a way of changing too. If this wind had not changed, they decided that they would be wetter on one side than on the other. Outside, every man was equally wet. They had to feel their skins. To everyone's relief everyone was wetter on the left skin than on the right. So to the left they turned and walked into the rain. Their feet began slipping among stones, on a gradual slope, no precipice. Then came low shrunken trees and a darkness intense; how could they find their way to the little hut, a mere speck on the vast sides of Ventoux? Fabre felt the bushes and was stung.

What joy! Nettles! Nettles that grow only on the path to man's habitation. "Feel for stings!" "Follow the sting!" became the watchword. His friends scarcely believed him—except a famous botanist, who was among them. He too knew that nettles grow only where men have lived. Sure enough the stings brought them to the hut, a warm fire, dried clothes and food.

But perhaps you have an idea that Fabre's life was a very jolly one. You must not forget money. It is a thing difficult to live without. Fabre was in great poverty. He tried to earn a living for himself and his family by writing school books. One he called *The Earth* and another *The Sky*, but in those days text-books in science did not bring their authors comfortable royalties as they do to-day.

He published that wonderful book the first volume of the *Souvenirs Entomologiques*, but the world did not like the title and few people discovered that it was more enthralling than a novel. So neither did that bring him relief from anxiety.

At Orange, too, he had the terrible grief of losing his son Jules. Fabre was a quite delightful father who used to share his fascinating work with his children. It must have been fun to have a father who set you to watch beetles and caterpillars and was as excited as you were at your discovery of a chrysalis, or a new flower, or strange little beast.

His elder children, Antonia, Claire, Jules and

Emile, all helped him. If one of them was away, he or she would send him packages containing strange finds. When they were at home they all joined in the hunt for the specimens he needed, or helped him to dig deep, deep into the ground to find a hidden beetle's home. But it was one of the very youngest who became his most eager fellow-worker—little Paul.

Little Paul is always being mentioned in his father's book. He was full of common sense, afraid of nothing, did not hesitate to hold caterpillars in his hand, or to turn over the horriddest dead moles to see how the work of the burying beetles was getting on. The whole family worked together, or played together, whichever you like to call it. And if only they had had enough money, they would all have been as happy as tinkers in their garden full of wild cyclamen and ranunculus and anemones.

CHAPTER XII

Insects in Sérignan

"Wherever Reason has dominion, there dwells a severe beauty, a beauty which is the same in all the worlds and under all the stars This universal beauty is order"—
FABRE.

ORANGE's arch of golden stone was looking even more than usually like a soaring kingly gateway in fairy-land, when, in the early, dewy morning, the children waved it good-bye on their way to Sérignan, the village where Fabre spent the greater part of his life.

"I have never seen anything so beautiful," said Margaret, "as that shimmery mist of golden poplars stretching out into the distance through that golden gate. We ought to have stopped to look at the sculptures on it. Are they battles or just men?"

But no one answered her, for Penelope was threading her way through a string of high-wheeled mule-carts and Giles and Geraldine were both hanging out of the window looking for the river Aygues and the turn to the right for Sérignan.

There it was, the bridge over the broad white expanse of pebbles!

"That's it! that's it! stop, Penelope! Those are the pebbles that when the snows melt on the Alps, rush down the river-bed crashing on one another

with such a noise that Fabre heard them in his house a mile away."

"Why aren't they doing it now?" asked Giles.

Because the river is dry, just as it was when Fabre used to walk about among the pebbles studying the mason-bees. Let's get out, and, if we find a nest and the bees at work, you shall hear:

*A Tale of Mason-Bees*²³

Just here, among the stones of the river Aygues, Fabre captured his two mason-bees. He wished to know whether, if you carried them a long way away from their nest, they would know how to return. He had to capture them with great care so that they would be in no wise injured; whether *he* would be or not did not matter. While they were at work, he covered them with a glass, and, as they flew up into that, he shook them out into a screw of paper and so placed them in safety in a tin. Then he carried the tin the two-and-a-half miles to his house in Orange and there marked the bees. A very difficult operation it was, for he dared not hold them firmly for fear of damaging their delicate wings. When they were marked with a white splash on their neck, he let them free. Away flew one; the other was not so eager. Next morning Fabre came back here to the river-bed to sit by the empty nest. Empty? No, there was a bee working at it, but a bee without a mark.

Had she lost her mark? Wait! Presently someone came flying, buzzing—a marked bee. Then began a battle. In the landlady's enforced absence a new tenant had taken possession and would not listen to reason. Not for long, however! Bees never, says Fabre, fight to kill and the one who has the right always wins. So the marked bee regained possession of her house. One bee had come back covered with pollen. She had not wasted time during her two-and-a-half miles of flight, but had gathered honey on her way.

On another occasion Fabre took forty bees from nests under his roof in Orange and carried them here to the bed of the Aygues. He had not enjoyed marking forty stinging bees, and perhaps when they stung him he *had* pinched some rather hard; for only twenty set out home with the gay flight he liked to see. Meanwhile, his daughter at the top of the ladder was waiting for the bees' return. When Fabre himself got back, the daughter reported two bees returned in less than three-quarters of an hour after being released; two-and-a-half miles in forty minutes and against a strong wind was not bad. A serious elderly lawyer came on a visit at that moment and when he heard what was afoot, he left his reverend papers and hat and dashed bareheaded up the ladder to watch in a torrid sun for the bees' return. Of that company, fifteen returned before a great storm came on which prevented Fabre from counting any more.

Then with beating hearts the four returned to the car. They were now quite close to Sérignan, the place of all others most nearly connected with their hero, where he had found his heart's desire in a little house and garden of his very own and where he had met all his most interesting insects.

"Creep," said Geraldine, "let us have time to look." And truly the land was worthy of a long, long gazing. To their right were airy mountains touched with snow and in front the sharp-cut Dentelles. To the left was a deep blue distance and near at hand the silvery, sparkling mist of olive leaves in the wind. The newly-turned earth was bright red and the young vine shoots springing up in it were shining gold. Then came a white bower of cherry-trees in bloom and suddenly from time to time the dark, heaven-pointing finger of a cypress or a clump of sombre holm oak to make the colour more intense

"I could scream with the beauty of it," said Margaret.

"That orchard is medlars," remarked Giles, "their large flopping light pink flowers are just like Grannie's and that big farm has orange-coloured houses, or what colour *would* you call them? Yellow ochre they are and with their red roofs against those almost black ilexes they look like a Spanish painting."

"It's a *nice* land," said Geraldine, wrinkling her nose, "you can smell the thyme and I like the ribbon of bright blue grape hyacinths that is

running all along the road, though you are not looking at them."

That old woman gathering salad in the ditch with her head tied up in a bright cotton handkerchief probably knew Fabre?

But she did not, when they stopped to ask her, for she was a stranger newly come to Sérignan.

Yet they were glad they had stopped, for her face was wrinkled like a winter apple and her eyes were grey, and overhead among the pears in bloom the birds were holding parliament in an exquisite confidential chit-chat.

There was a dog barking too that reminded them of something. Penelope had stopped her engine and ahead there was a long high wall with cypresses above it. Yes, they had found it; that was La Harmas, Fabre's own house, his hermitage for which he had built this long high wall to shut himself and his insects away from the world.

"But before we go any nearer," said Giles. "What are those huge whitish-grey things in the pine-trees? Are they all wasps' nests?"

Oh, no! exclaimed Penelope, why! those must be the Pine Processionaries! Above the wall they could see tall gaunt pine-trees, many of their branches almost needleless and decked with long thick bags of greyish cobweb.

*The Tale of the Pine Processionaries*²⁴

"Every year the caterpillar," writes Fabre, "takes possession of my pines and spins his big

purses. To protect the foliage, which they destroy and leave the tree as if burnt by fire, I have to get rid of the nests every winter with a forked lath. Gluttons! If I left you alone, you would soon deprive me of my murmuring pines, for they would be bald. Let us examine the lower branches of a tree. Pine leaves grow two by two; where they join is a kind of silky white muff, slightly tinted with pink and covered with little, lovely, transparent, white scales fixed on the top of one another like tiles on a roof. They are fastened at the top, free at the bottom and neither blowing nor pushing can get them off. If you stroke them upwards they rise and remain open; if you stroke them down, they fall flat again. And they are soft as velvet to the touch. They form a roof to protect the eggs of a mother—the pine bombyx. No drop of rain or dew can possibly penetrate under the roof. Those scales the mother moth has made with a part of her own body to protect her eggs. Like the eider-duck she has made a warm greatcoat for her eggs with her own powdery skin.

“With the pincers I raise the scaly covering; there are the eggs like little white enamel pearls, tightly grouped in nine rows. In one row I count thirty-five eggs: the nine being parallel and practically the same; that makes a total of three hundred eggs. A nice family for one mother!

“Young and old, learned and ignorant, we should all say as we look at the bombyx’s ador-

able little spike: it's beautiful! And what would strike us most would not be the enamel pearls but the way they are put together, so regularly, so geometrically. A serious thought: exquisite order and law rules the work of a mindless thing, one of the humblest of humble things. A frail moth obeys the harmonious laws of order."

Fabre goes on to tell us the strange history of the scraplet of life that springs from those pearl-like eggs. First there comes the tiny caterpillar whose head is twice as wide as his body with a large strong (comparatively speaking) mouth fit to grind the hard pine needles. One mere hour after his birth he is walking in procession and spinning himself a little silky shelter against the rays of the sun which he detests. As he grows he wanders farther and farther up the tree making himself larger tents. The tents are spun around the needles, so that master grub is able to sit at home and eat his roof-top. When, in consequence, he having eaten the needles the tent was fastened to, his whole tent blows away in the wind, he goes higher up the tree and makes another.

But when winter is approaching, the caterpillars all together make those great hanging winter nests that have so alarmed Giles. Fabre comments on the wonder of their instinct: that they, who have had no experience of cold, and whose dead mother has taught them nothing, should all the autumn weave a huge, warm nest for a winter home, just as if they knew how cold

it would be! He tells how he found that the caterpillars turned out to be barometers. By watching their movements, he knew what weather was coming; and the weather forecast in the newspaper agreed with theirs.

Every day in fine winter weather they came out of the nest, and, following a leader would descend the tree in procession, the nose of the second close up to the tail of the first and so on, for the whole nest full, which sometimes numbered three hundred. Each, who walked, left a silk thread as he passed, and the whole procession made a broad and silken high road, which would take them home on the darkest night.

One day, seeking for experiments to put their intelligence or lack of it to a test, it entered Fabre's head to wonder what they would do if their silk thread could be made to go round in a circle. Luck favoured him, for the procession one day began to climb up the side of a large garden vase. As they reached the top and began to wander around the edge, Fabre brushed away that part of the procession which was still below and sent a scrubbing-brush around the vase to get rid of any silk roads that might have been left on its surface. Round and round the caterpillars walked. Eating time came and passed. Sleeping time came and they slept on the edge. Procession time returned and they returned to their circular walk. Day followed day and still they walked . . . round and round seven times in

twenty-four hours; they might be hungry; they might be tired; they might be cold or sun-scorched; but so long as their silken pathway grew broader, they knew their way; so long as they had a leader in front, they thought that all was well.

When they were tired out a road accident saved them. Exhausted, they fell over the vase precipice and found their way home. In spring they made their last procession and, finding suitable soil, dug their own graves and buried themselves, but not of course to die, only to change their form underground and become each a cocoon.

Fabre wanted to know how a delicate large-winged moth could possibly dig itself out of the ground when the time came for the cocoon to change into a moth, so he buried some in glass tubes full of hard sand. Presently he saw the nymph, no moth, but a slim, smooth mummy, her wings folded close beside her, her antennæ flattened backwards, her head armed with a hard strong digging tool, dig herself out of the sand with her forehead alone. Only after she came to the surface did she take the form of a moth and open her plumed antennæ and her spreading wings.

That was the lady who laid the eggs and Fabre, interestedly examining her, to find where she got the little scales with which she made the egg-house, found that when he rubbed her tail a dust

flew up, a dust of little scales. Unsuspicious, he continued his watching until his eyelids began to swell and his fingers to burn. His family thought him ill when he went down to dinner, but he had guessed that the burning, which was like nettle stings, was connected with the moth. Later he found that the inside of the nests and the caterpillars both gave off invisible and poisonous prickles which would suggest that it was as well to be careful in handling the bombyx of the pines.

CHAPTER XIII

Fabre's Garden

"Speak not,—whisper not,
Here groweth thyme and bergamot,
Softly on the evening hour
Secret herbs their spices shower,
Dark-spiked rosemary and myrrh,
Lean-stalked purple lavender"

WALTER DE LA MARE

As the high, narrow green door in the wall opened at their ring, Geraldine stood rooted to the spot. Sometimes people are disappointed, but one much-famed thing could never disappoint anybody and that was Fabre's garden on a hot April day.

The little girl had no eyes for the guide-girl who had opened the door and was talking pleasantly to Penelope, nor even for the long-bodied, short-legged, white dog who was making friends with Giles.

She had never heard of such a garden, she had never dreamed such a garden could be. "It's full, full, full of the sound of bees! And it's all, all, all mauve and pink and purple with flowers," she murmured, standing with her hands clasped, a slip of blue under bowers of heavy scented lilac which left her only a narrow lane to see the two great shading plane-trees and the pond and the masses of rosemary in bloom and the irises thick in what might have been the path.

Bewitched she wandered on, forgetting the others who followed her with their youthful guide; starting every now and then as a bee buzzed into her face, pausing to sniff the scented air; gently, with reverent fingers, pulling aside the long sprays of flowering bramble, or rosemary or lavender or marjoram that in wild profusion often blocked her way; treading carefully to avoid the wild yellow and purple irises and the tufts of pink thyme that everywhere had taken possession of her path. It was a big garden, a wild garden, a place to lose oneself and a place to hide oneself. It was all avenues of tall flowers, far taller than Geraldine, and the flowers were of the kind that are covered with blossom from the ground to the sky. And behind the avenues there were thickets of flowers, impenetrable thickets, a chaos of flowers, out of which here and there grew tall fruit trees in bloom and at the end of the garden one cherry-tree, whose only business was to hang heavy with masses and masses of flowers. Neither Geraldine, nor the bees, had ever seen such a sight and they were both making the best of their joy.

From the end of the garden you could not even see the house, nor catch a glimpse of it down any of the avenues. The guide-girl came up and as if she had answered a thought, said: "The flowers are all wild things that have come with the wind or been brought by Fabre from the slopes of Ventoux: here is purple savory that

makes bigger clocks than any dandelion; here, savage thistles loved by the liners of cradles because of their down; broom with its big yellow flowers, cystus tall and low and many coloured, juniper bushes, strawberry trees, violets still smelling sweet but almost over, and lavender. But there is more rosemary than anything else as you see. Here are thyme and sage and strange southern cactus and trails of blue periwinkle, dwarf oak and pink centaury and yellow gorse.

"Fabre had all his life desired a laboratory out of doors where undisturbed he could watch insects. This place at last he was able to buy. It was just a *harmas*,²⁵ a bit of stony land too poor to be ploughed, where stones shared the territory with rock cystus and thyme, but where someone had dug and tried to grow useful plants and then abandoned the attempt, so that thistles and nettles and couch-grass, which always follow men's neglected work, had taken possession.

"Fabre built the wall, cleared the ground, and planted it with all kinds of lovely rare flowers sent to him by his friends in the botanical gardens, but alas, most of them could not bear this grilling sun and the fierce mistral wind which often blows here. So he took the delicate ones into the glass-house and the strong native ones are those you see filling the garden. You will have much ado to find all the different kinds, but all the insects from far and near, common insects and rare insects, discovered their own particular food and made

their home here just as if they came on purpose for Fabre to watch.

"In many other laboratories people study parts of dead little beasts, in this garden laboratory, Fabre studied living beasts, watched them at their hunting, at their building, at their loving, at their feeding and at the education of their children. Sometimes, of course, he had to watch them at their dying, but he had severe critics when he did"

*The Story of the Tarantula*²⁶

One day he was trying to discover whether the black-bellied tarantula, an immense spider, which kills the powerful carpenter-bee instantaneously with a single sting in the neck, was dangerous to creatures of another kind.

"I make it," he writes, "bite the leg of a young sparrow which has got his feathers and is all ready to fly. A drop of blood flows, the bitten spot turns red, then violet. The bird loses the use of his leg almost immediately and drags it with his claws crumpled up; he limps on the other. But he doesn't seem much troubled about it and he has a good appetite. My daughters feed him on flies, crumbs and apricots. He is going to get better, grow strong again; the poor victim of scientific curiosity shall have his freedom again. We hope so, all of us Twelve hours after, our hope for a complete cure increases. The invalid accepts his

food eagerly—calls for it if we are late—I think his paralysis is only temporary and will soon pass off. The next day he refuses food, wraps himself up in his stoicism and his ruffled feathers, turns himself into a ball which twitches sometimes and sometimes is quite still. My daughters keep him warm by holding him in their hands and breathing on him. His convulsions become more frequent. A yawn is the sign that all is over. The bird is dead.

"At supper there was a certain coldness. I read in my family's eyes mute reproach about my experiment; I felt a vague accusation of cruelty. The end of the unhappy sparrow had made the whole family sad. And I too was remorseful; the price was too great for so slight a result."

But . . . It is just as well to know, said Penelope, without trying it on a human being, if the bite of a tarantula is really dangerous to man, so Fabre tried again with a large toad. That too died. It is just as well, even for large animals, to keep out of the way of tarantulas.

"Does the tarantula have to keep out of the way of anything?" asked Giles.

Oh, yes! Of men and other things, but especially of the little digging-wasps, the pompilus. Once, but only once in all his life in this very garden, Fabre saw the pompilus capture a tarantula. He says it was the most striking of sights to see "the intrepid poacher dragging by one hand the monstrous captive she had just

taken."²⁷ She—all the insects we talk about except one are shes—found her den and left the tarantula outside while she went in to see that all



was well; then she dragged him in; came out, dragged bits of mortar to close the entrance of the hole and flew away. She had been laying her egg and filling her baby grub's larder. Fabre longed to see her actually fighting and capturing the tarantula. He never did, but he did see her fighting another large spider.

"The spider-hunter," he writes, "explores a wall, runs, jumps, flies, comes and goes, passes, repasses. A spider appears at the entrance to a hole and watches the watcher.

"The pompilus draws back, flies away. The spider goes back into his den. The pompilus comes back, so does the spider—even comes out of his den and looks his enemy in the face, who flies away."

Fabre grew excited and longed to solve the problem of how the little pompilus could get the better of the fierce spider. He remained whole weeks contemplating the old dull wall.

He saw the pompilus quite often seize a

spider's claw and try to drag him from his hole, but the spider was always holding on to his walls with his two hind legs. Over and over again the wasp flies about, makes a sudden bound, seizes a hand, lets go—sometimes she does get the spider some way out but he gets back to his fortress. But patience conquers. Once she gets the spider up from the ground, lets him fall; he rolls into a ball in his distress and she has her opportunity. She stings him just in the one place where his nerves are gathered together so that a sting there paralyzes him. The wasp knows that in his den the spider is full of fight, but a coward outside, so outside she must get him and does. When he is captured, what do you think she does with him? Puts him back in his own hole and lays her egg on him. In his own silk-lined home her grub will have him to eat. He is not dead, remember, only paralysed and the grub will enjoy at the same time the warmth and softness of his house and the good flesh of the former master.

The tarantula, whatever her other faults, is a most charming mother. Fabre says he was most friendly to spiders, admitted them into the intimacy of his study, made a place for them among his books, offered them the sunshine of his window-sill and called on them enthusiastically in their country houses to ask them crowds of questions.

“What kind of questions?” asked Giles, sceptically, “and how could they answer?”

Oh! such questions as: What do you have for dinner? How do you hunt? What sort of a house is yours? Do you get on with your husband? Do you love your children as much as other people's children? and a thousand others. She answered them all with a famous word: "Come and *see*!"

The tarantula has many houses in this stony, thyme-overgrown garden, it is just the kind of place she likes. Her dwelling is a fortress and no villa, a deep hole first of all that makes a sudden turn underground, perhaps many twists and turns. At the end of the twisting passages is a room where the owner rests; the walls are covered with thin silk to prevent the dust falling in and to serve as rope supports for her feet when she is at the top of her watch-tower surveying the world. At her entrance door there is a circular parapet of small stones, fragments of wood, tiers of leaves bound together with silk. Fabre saw her big house near the window where he watched her for three years. She was a real stay-at-home who built her parapets with any materials close at hand. So Fabre asked her what kind of parapet she would make if she were rich. To his special spider he gave smooth pebbles, small and big, raffia, bits of many-coloured wool, made her rich, in fact. She answered without hesitation by building such a donjon as spider had never seen before. Visitors thought the variegated edifice of woven wool, raffia and stones two

inches high was a bit of Fabre's fancy-work.

The tarantula shuts her open door with a veil made of the rubbish about her doorstep, often the heads of the beasts she has eaten, woven in with silk. When the door is open she sits for hours head outside, her eyes in a fixed stare, her arms ready for a grab, and woe to anything eatable that passes by. When she is young, she lives houseless, travels to find her food, leaps into the air to seize it. But when she is grown up, she excavates her mansion. With what? Have you ever thought? Fabre asked her and watched her doing it with her unbelievable teeth.

But a strange thing he found out not only about the tarantula but about all insects. At a given moment in their lives they begin to do something, say to dig. That is their moment for doing that particular thing. They can't do it at any other moment. If he captured a spider who had dug down a quarter of an inch and put it on to the ground where a little pit a quarter of an inch deep had been already dug by himself the spider went on digging. If, however, he put her on ground with no pit, she did not know what to do, she just died. She could not begin and do again the part she had already done. No insect can make up its mind what it ought to do. Many were the experiments he tried. A bee who had reached the moment for filling a cell, if Fabre gave it a full cell, would pour its honey over the edge and go on closing the already closed cell.

But to return to the mother spider. She weaves a silken carpet on which to lay her eggs, lays them and then turns the edge over and makes a ball of the whole, a silken ball full of eggs.

That loved bag she carries about with her wherever she goes, resting, hunting, leaping. If an accident breaks its cords, she throws herself madly on her treasure, and embraces it adoringly, fiercely, ready to bite anyone who tries to take it from her. For three weeks daily she holds it for hours in her hind legs up to the sun to warm it, turning it and turning it, so that each side in turn receives the heat. If Fabre took it from her with pincers she would fight furiously; but if he gave her some other spider's ball of eggs she was quite happy; and just as happy too, if what he gave was a mere ball of wool, poor stupid spider!

Then comes the moment when the ball opens and the thousand babies break out and climb at once on their mother's back. Two or three layers thick, they cover her whole spine and she carries them about like that for a whole seven months. She looks very motherly, very admirable. They are very well-behaved, the little fellows; nobody moves, nobody tries to tease his neighbour. They stick close and form a kind of frock for mother. But they often fall off. That is not their mother's business! If they clamber back, well for them; but she doesn't care. If Fabre sweeps them all off and gives her someone else's family, she is quite content. If he, or accident, prevents any of them

returning to her care, she is equally content. She seems not to love her children. One day Fabre saw one mother, after a terrible fight, eat another mother and afterwards adopt all the orphan children as well as her own. "Henceforward," said he, "the two families so tragically united will make only one."

"How in the world does she feed them all?" gasped Geraldine.

They live on sun, pure sun! They never eat until they are big enough to do their own hunting, or so, says Fabre.

While they had been listening to the story of the tarantula, the four found themselves standing by a gorse bush in full flower. In the shade of the gorse, said Penelope, the fiercest of Fabre's insects lived. See what you think of the

*Story of the Praying Mantis.*²⁸



Here they call her *Lou Prego-Dieu* (the beast

who prays to God). The Greeks too called her *The Prophet*.

"Peasants," says Fabre, "are not particular about resemblances. They saw a stately-looking insect standing majestically on the sun-grilled grasses. They noticed her large delicate green wings hanging about her like a linen veil and her front feet, her hands so to speak, raised to heaven as if she prayed. That was enough for them, the thickets were peopled with prophetesses and nuns in prayer!

"Oh, dear innocent people, what a mistake you made! These holy airs and graces hide the most atrocious manners, these prayerful arms are horrible brigand's claws. The praying mantis is the tiger of the peaceful race of insects, an ogre in ambush. Alone among insects she can cast a glance, she inspects, examines, she has almost a face. Her weapons are her legs, for her thigh is a terrible saw with two parallel blades separated by a kind of gutter into which her lower leg, which also has a saw, folds when it is bent. And her foot is a sharp hook. Each leg has a sharp hook and two double saws. . . . How many times in my chase, clawed by the beast that I had just captured, and not having both hands free, I have had to seek aid to escape from my captive! None of our insects is more uncomfortable to manage. It clutches you with its bill-hook, stabs you with its sting, holds you with its vices and makes it almost impossible to defend yourself

if you want it alive, and can't kill it with your thumb.

"When the mantis is resting, that trapping machine looks innocent enough folded against its chest. Praying she is. But if something eatable passes, that praying attitude is gone in a flash. The three long pieces of the machine suddenly lengthen out and drag the captive back between the merciless saws. No cricket, grasshopper or even more powerful insect has any chance, once caught within the working of those four lines of sharp points."

To study the creature, Fabre kept several in captivity. He built them chalets with a metal meat cover, a flat stone and a tuft of thyme. Their needs in that way were small, but not so their greed. To satisfy that Fabre called in the help of the village boys—paid with some bread and jam and a slice of melon—to hunt living crickets and grasshoppers, while he himself, net in hand, made a tour of the garden to get his *boarders* more magnificent game. He did not want it exactly for their eating but to test the boldness of the mantis, for his captives were to be bigger than the mantis itself and to include two of the biggest and fiercest kinds of spiders.

"The bold huntress hesitates at nothing. At the sight of the largest of the crickets the mantis starts, turns, and throws herself into a terrifying posture." Fabre says that, accustomed to it as he was, he could never see her sudden change without feel-

ing the surprise which a Jack-in-the-box causes.

"Her front wings opened, thrown back and to the sides; her larger wings spread to their full width, making a vast crest above her back; the end of her body twisted crossways and moved up and down with sharp shocks, making a kind of wind and a noise of puf! puf! Standing firmly on her four back legs, she shot out the armed front ones, showing her rows of pearls and her black circle with its white centre on her under-arm, her jewels of war kept secret in peace time. Motionless she watched the cricket, her eyes fixed, her back moving slightly as it moved. She was trying to make it weak with fear

"Does she succeed? No sign of feeling shows on the other's impassive mask. But it is certain that the threatened one knows the danger. He sees a spectre before him with its hook ready to fall; he knows he is facing death and yet he does not fly while there is time. He, who can jump so well far out of reach of those claws; he, the leaper with the long legs, stupidly remains standing or even goes a little nearer. . . .

"But, though what we have heard of the mantis is not prayerful, worse remains: not even the conduct of spiders is as ill-famed as hers."

In fact, children, she behaves so badly, you will have to read about it yourselves.

"Oh, no! Penél," said Giles protestingly, "it's just when they are bad, that they are interesting, what does she do?"

She is a cannibal who eats other mantis mothers, a thing not even done among wild animals.

"Oh, the fierce beasts!" Fabre exclaims. "They say dog does not eat dog. The mantis has no scruples; she feasts on her fellows even when her favourite food, the cricket is plentiful around her."

But there's worse still: Let's go to a mantis wedding! It is not easy to meet a mantis gentleman. There are few of them and you will soon know why. Still, there he is "an affectionate wisp" as Fabre calls him. "He makes eyes at his large and powerful lady; he turns his head towards her, bends his neck, puffs out his chest. His little pointed phiz is almost an impassioned face. He contemplates the desired one for a long time in the same position. She keeps quite still, indifferent. The lover, however, has seen some sign of consent invisible to others. He approaches; spreads his quivering wings. That's his way of proposing. They embrace. But by next morning at latest she has seized him, has bitten his neck according to ancient custom and thereafter methodically, in little mouthfuls, has eaten him, leaving nothing but his wings." And like Henry VIII, she marries again, and eats her next husband or her sixth with equal appetite.

But now we must go into the house, for were we to stay in the garden until we had heard all the tales that happened here, we could never get home.

CHAPTER XIV

Friends to Dinner²⁹



FABRE's house was pink with green shutters. Close to it was the round pond with a fountain in the centre, where the frogs used to congregate and keep him awake with their chorus till, his patience at an end, he ordered the lessening of their numbers. *That* pond was easy to find, it filled the space under the plane tree with coolness. Not far from it was the tank where the household washing was done and the path where Fabre used to erect the stand on which he placed decaying snakes and dead moles to find out how long the little burying-beetles would take to clear away entirely such big bodies.

As their guide-girl opened one of the two doors that led from the garden into the house, a hush of expectation fell on the four. This was the hermit's very cell. The first room they saw was the dining room, a simple old-fashioned large room, its walls covered with photographs, its floor, bare boards. This was the scene of those silent meals of which they had heard. Fabre, his eternal old felt hat always on his head, would

take his seat lost in thought; then the others would have to whisper so as not to disturb him; only a lost wasp or a buzzing fly dared to make a noise. Whatever was on the table, Fabre himself would eat only a fig or a few dates and fruit. He turned from foods which caused suffering to animals, especially that favourite luxury of the rich: *pâté de foie gras*. "Is it not buying too dear," he asked, "a mere mouthful of fat?" He knew that to produce it, geese were, in his time, tied down to grow fat without the chance of moving.

But sometimes he loved to please his friends with an odd menu of his own choosing: some specially-prepared toadstools from which he had taken the poison by boiling them in salt water; green and black olives; legs of mutton stuffed with garlic; white-fleshed or orange-fleshed melons or those little mountain cheeses that melt in the mouth.

Many famous people sat at that table with him, but he loved those best who needed his help in the solution of some difficulty, and he disliked most those who came from empty curiosity or to see a famous man. Those he sent away without ceremony and often rudely enough. His most frequent visitors were the village schoolmaster and the blind carpenter. They had permission to see him at all times and even to enter his study in his morning work hours. To them he read his books before they were printed. The blind

carpenter, Marius Guignes, often accompanied him on his walks and helped him by holding his parasol over him while he watched an insect at work during long hours.

Another friend of his was Favier the gardener, who had been an old soldier and travelled much and who knew most things because he had eaten them. One day a lady brought a new bulb for Fabre to grow. "There is its root," she said, "and there its young sprout."

"That is a sea urchin, Madame," said Favier, "I have often eaten them."

Sometimes, too, in this dining room, Fabre gathered little parties around him, friends, nephews and nieces and his own children. The talk ran round in the winter evenings while Mistral howled outside, gay talk about ideas, about history, amusing stories, memories of little beasts and of his own life—talk broken in on by the children's recitations and his own poetry.

Here is his own account of a meal he prepared:

"It's Shrove Tuesday, when they used to make carnival. I am planning a mad dish that Rome's mighty feasters would have loved. I must have tasters—specialists—each severally gifted to discern the merits of an unknown dish, of which no one, outside the ranks of very learned scholars, has ever heard."²⁴

"We are to be eight—my family and my two friends, probably the only two people in the village in whose presence I dare to be mad. One

is the schoolmaster. The other is Marius Guignes, a blind man, a carpenter who uses the saw and plane in darkest night with the same exactness as a seeing man in daylight. He lost his sight in youth after having known the joys of light and the marvels of colour. As compensation for eternal darkness, he has acquired a gentle smiling philosophy, a keen desire to fill up the gaps in his elementary education and a sensitiveness of hearing which makes him quick to seize the subtlest of musical sounds."

There is a story that illustrates the blind man's smiling philosophy: when a friend was sympathising with him about his blindness he said: "If I had my sight, I shouldn't have my nice little pension from the *Quinze Vingt* for blind old men."

"He has too," said Fabre, "an astounding fineness of touch in hands hardened by work. In our conversations, if he needs information about a difficult construction, he holds out his palm and with my finger I trace on it the figure or plan to be made. Only the slightest explanation is necessary and his saw, his plane or his lathe will give reality to my idea.

"On Sunday afternoons we meet, especially in winter, when the logs burning on the hearth contrast deliciously with the sound of the savage mistral. We talk about everything (except hateful politics): philosophy, morals, literature, tongues, history, coins, archæology. At one such

meeting we plotted to-day's dinner. The unusual dish is to be *cossus*—much appreciated in ancient days; weevil is the translation.

"When he had eaten up nations enough, the Roman, brutalised by excess of luxury, began to eat worms. What exactly were these worms? They were big, not disagreeable, and above all, fat.

One beautiful winter afternoon, all my family—Paul with a cutting instrument—set out to dig into two old tree stumps. The wood, which is hard and dry on the outside, changes into a kind of slab of starch inside. In the heart of this damp, tepid rottenness there is a mass of worms, each as big as a man's thumb. I have never seen fatter. Examine one; it pleases the eye by its ivory white and the touch by its satiny smoothness. And if you are not prejudiced about eating worms, it is rather tempting, this bag of fresh butter. At sight of him, I knew him! That's the *cossus*, the real *cossus*! Why not try the famous dish?

"We gather a lot . . . to study . . . and to solve a kitchen problem. We must know the insect the thing is going to turn into; we must find out how good a weevil tastes. It's Shrove Tuesday, the right day for a mad dinner.

"I don't know with what sauce the Cæsars ate their *cossus*. Ortalons are roasted in front of the fire; they are too exquisite to be mixed with sauce. Let's treat the worms in the same way, they are the insect ortalon. Spit them and grill them

on a well-heated grill. A pinch of salt—that every dish must have—is the only seasoning. The roast grows gold, sizzles gently, weeps a few oily tears, that catch fire and burn with a white flame. It's done! Let us serve them hot!

“Encouraged by my example, the family bravely attack their little roast. The school-master, dupe of an imagination that can't help seeing the big worms of the afternoon crawling about his plate, hesitates. We keep the smallest pieces for him because they are not so full of memories. My blind friend, who is freer from imaginary horrors, eats his with every sign of satisfaction

“The vote is unanimous: the roast is juicy, subtle and most tasty, with a certain savour of toasted almonds and a vague aroma of vanilla. Worms, a most acceptable dish; one might even use the word *excellent*!”



CHAPTER XV

A Moth and a Butterfly

"I have lain in the sun,
I have toiled as I might,
I have thought as I would,
And now it is night"

ROBERT BRIDGES

"Now," said the guide-girl, "we will go to Fabre's study." To do that, they had to go out through the front door into the garden again, turn to the right and enter the house by another door.

They found before them a winding stair leading to a large room. It was Fabre's study, just as he had left it—the laboratory in which he had watched so many little beasts tell him the secrets of their strange lives. There to their left were the two windows opening on to the garden, one of which was always left open so that the insects could come and go at will.

There, all round two sides of the room, were cases reaching to the ceiling, containing collections of shells, fossils, beetles. These were topped with a frieze of tall, neatly-tied brown paper books in unending line.

"What are those?" asked Geraldine, awed at their great number.

"Those," said the guide-girl, "are his collections of wild flowers. He began them when quite

a boy, and they contain all the flowers of the north and of the south, of the plains and of the mountains and all the seaweeds and the water-weeds."

The little girl stood silently counting the volumes of a book that went round four sides of a room and thinking of the strange plants inside, of their colours and of the long, long hours it must have taken to press so very many.

"Fabre was a *very* tidy man," she said.

"Perhaps you would not have thought so," laughed the guide-girl, "if you had seen his room when he was working here. For then, that table was covered with flasks, glass tubes, old sardine-boxes, which contained the things he was watching: germs developing or cocoons being made or eggs being hatched. There also were cases made of meat covers or old flower-pots, and glass jars containing dead and decaying beasts and ghastly smells. Smells that shocked his visitors, he seemed not to notice! So carried away he was with the



joy of watching even the wonder of a bluebottle making a dead snake rot, that his face was full of jubilation as he leant over the horrid mess."

The children saw the famous little table that Fabre had possessed nearly all his life and in whose honour he had written a charming chapter of his memories. On it were his pen, his ink-pot and one of his beautiful, finely-written manuscripts.

"What lovely neat tiny writing!" said Geraldine.

There, on the big centre table, were his only working instruments, his narrow trowel, his pen-knife, his magnifying-glass, his forceps. There were bottles still containing his preserved specimens and two immense and lovely moths clinging to a stick as if alive. On the mantelpiece was the black clock that he always stopped, because it made a noise and he liked silence when he worked. The guide-girl told them how he insisted on having silence in the mornings. He would get up at dawn and stride up and down the kitchen eating his breakfast as he walked, for movement was strangely necessary to him. When he wanted to begin work he would first pace up and down his study to rouse all the fullness of life and energy within him. Then he would sit and write. You can see how the varnish has been worn from the floor in a circle round the table: that worn pathway will always keep the memory of this uncommon way of sharpening one's wits.

After his very early breakfast he would go out in the dewy morning, examine his shrubs and his beasts and go to his study. There he would bury himself in utter silence; and woe to anyone who disturbed him! He was sometimes observing, sometimes writing, sometimes putting his observations together. At twelve he would leave his study, "his face pale and drawn" with work to enjoy a free half-day. Not what we would call a holiday, however. He always had odd bits of pencils and paper on which he took notes of anything he saw and he was always seeing.

From two to four he taught his new family, for he had married a second time. For them, he took out once again all his chemical apparatus. He would tell the little ones charming fables and sometimes lose his temper with them and shake the blackboard at them, but generally he delighted them by sharing his work of watching beasts with them.

There is an amusing photograph of Mr. and Mrs. Fabre and the children all almost standing on their heads in the garden trying to reach the bottom of some beetle's sunken dwelling. They had to dig on that occasion a hole five feet deep and narrow too—not an easy task and all to find the minotaur beetle who makes a hole as deep as that for her grub.

"What was the most interesting thing that happened to Fabre in this study?" asked Margaret.

"That would be hard to say," replied the

guide-girl. "It might be the discovery of the minotaur's astounding secret; or the cricket's change of form, which Fabre called the 'best sight in the world'; or the osmia bee, herself making her babies into boys or girls according to which she happened to want at the moment; or the day of *le grand Paon*—the great peacock moth, of which we are reminded by those two on the table."

"Let's hear that one first," said Geraldine.

*The Story of the Peacock Moth*⁸⁰

"It was a memorable evening. I shall call it the evening of 'The Great Peacock'. Who does not know this superb moth, the biggest in Europe, dressed in red-gold velvet and a white fur neck-cloth? Her wings, dusted with brown and grey, crossed by a pale zigzag and edged with smoked white, have a round eye in the middle, an eye with a black pupil and a many-coloured iris, in which are a succession of arcs of black, white, chestnut and amaranthine red.

"Now on the 6th of May in the morning, I see a female leave her cocoon on the table of my insect laboratory. I cloister her at once, damp with the moistures of her birth, under a wire-net bell. For my part, I have no particular intention concerning her. I imprison her because an observer does it mechanically, being always on the alert for what may happen.

"And what a good thing I did! About nine in the evening, the family just going to bed, there is a commotion in the next room. Half undressed, little Paul is running up and down, jumping, stamping, knocking over the chairs like a mad fellow. I hear him call me—'Come quickly, come and see these butterflies, they're as big as birds!'

"I run in. There's enough to justify the child's enthusiasm and his exaggeration. It's an invasion which has never had its like even in our house, an invasion of giant moths. Four have already been caught and housed in a sparrow's cage. Others, in great number, are flying about the ceiling.

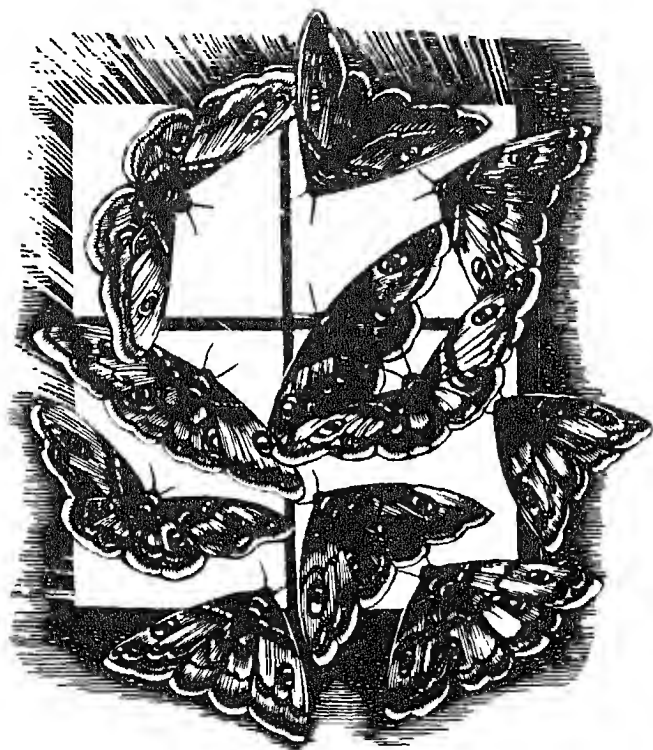
"At that sight, I remember the prisoner of the morning.

"Get back into your clothes, boy, leave your cage and come with me. We are going to see something interesting.

"We go downstairs to get to my study which is in the right wing of the house. In the kitchen, I meet the servant aghast also at what is happening. With her apron she is chasing big moths which she has begun by mistaking for bats.

"The peacock, it appears, has taken possession of my house in every direction. What will it be like upstairs in the prisoner's room seeing she is the cause of the flood! Happily one of the two study windows has remained open. The way is free.

"Carrying a candle we enter. What we see is unforgettable. With a soft flick-flack the great moths are flying round the bell-shaped cage.



They stand, fly away, come back, flutter to the ceiling, come down again. They throw themselves at the candle and put it out with a single

touch of their wings; they settle on our shoulders, stick to our clothes, brush our faces. It's the wizard's cave and his attendant vampires. Little Paul holds my hand tighter than usual to give himself confidence.

"How many are there? Twenty about. Add to them those that have lost their way in the kitchen, the nursery and other rooms, and the total nears forty. It was a memorable evening indeed, the great peacock's evening!

"Come from every direction, having received the news I don't know how, forty eager lovers were there to present their homage to their lady born that very morning in the secrecy of my study.

"For to-day, don't let us trouble the swarm of lovers any more. The candle disturbs them, for they throw themselves into it wildly and scorch their wings. To-morrow we will resume our study with a few carefully-prepared and thought-out questions."

The great question that Fabre would have liked answered was: by what means had these knights-errant discovered that their fair lady was awaiting them. They came each night at dark between eight and ten. The weather was stormy, the sky overcast and the darkness such that in the garden, away from trees, you could not see your hand before your face.

"Added to the darkness," says Fabre, "there are other difficulties. The house is hidden under

lofty planes; it is approached by an alley with a thick hedge of lilacs and roses; it is protected against the mistral by groups of pine-trees and a curtain of cypress. Yet, through this thicket of branches, in complete darkness, the great peacock threads his way to the lady he seeks."

It was not sight that helped them. Could it be eyes of some mysterious kind? If it had been, the moths would have flown straight, but that they did not do. They fluttered into all the rooms of the house. Could it be smell? No human nose, not even the children's, could detect any smell in the moth. But, to make sure, Fabre filled the room with the strongest scent he could think of which would overcome any other smell, but still the moths came. The fact that they came at night made them difficult to study. If they could see, he could not. The fact that they lived so short a time, only time enough to find their lady and to die, made his experiments very difficult. A great peacock never eats—has, in fact, no eating apparatus. It lives to marry and have children, and for nothing else at all.

So Fabre determined to try to find a similar butterfly, who flew by day, to see if she would answer his question.

He had read in books of the banded minim. He had heard that she might be born in the tumult of a great city and yet the event would become known to her knights far away in the woods.

He had, however, never seen a banded minim, when, one day, a visitor came to the Harmas.

This is how Fabre describes the event: "A bright face, not washed every day, bare feet, torn trousers kept together by a thread, a small boy of seven, purveyor of turnips and tomatoes, arrives one morning with his basket of vegetables. After having received, counted one by one into the hollow of his hand, the few halfpennies his mother expected for the garden produce, he takes out of his pocket an object he has found the evening before in the hedge while he was getting grass for his rabbits. 'And that,' says he, holding the thing out, 'and that, will you have it?' 'Certainly I will. Try to find others, as many as you can, and next Sunday you shall have a ride on the hobby-horse. In the meanwhile here are two halfpence for you. Don't get them mixed with the turnip pence' . . .

"What sort of treasure is my penny purchase? Will the famous minim come out of it?"

It is rare, this minim,³¹ very rare. Fabre had lived as Sérignan twenty years and never seen it—his little helper never found a second. For three whole years, he himself, his children, friends and neighbours, sought diligently and never found cocoon, caterpillar or butterfly.

"The banded minim is very rare around my village," he said.

"As I suspected, my unique cocoon was that of the celebrated butterfly. On the 20th of August

a lady issues from it. I establish her in a wire bell in the centre of my study, on my big laboratory table with its books, jars, dishes, boxes, retorts and other apparatus. . . . The rest of the day and the next day pass without anything happening worthy of mention. Hanging to the trellis on the sunny side, the prisoner is quite still, motionless. No quivering of the wings, no trembling of the antennæ—just like the great peacock. On the third day, the bride is ready, the fête begins. I was in the garden, already despairing of success, because of the long wait, when at three o'clock in the afternoon, in the heat, under a radiant sun I saw a crowd of butterflies circling round one another in the open window. The lovers come to visit the Fair! . . .

"Let's go up. This time, in daylight, not losing a single detail, I see once more the astounding vision that the great peacock had given me. In the study there is a cloud of knights that I should reckon at some sixty, as far as one can judge in such a moving confusion."

But that first minim answered no questions. Fabre in absence of mind caged a tiny praying mantis with the huge butterfly and the fay ate the giantess.

He had to seek three years to find another. I wonder if that other answered? Chance taught him one thing. She, too, three days after her birth was surrounded by a crowd of suitors and Fabre tried experiment upon experiment to find out

what strange sense showed them where to find her. If he put her in an *absolutely* closed box, no suitors came. But wherever else he put her, upstairs, downstairs, in drawers, in inner rooms, they came, so long as her hiding-place had the slightest connection with the outer air.

"One afternoon," he writes, "trying to learn if sight plays any part in the butterflies' seeking, I lodge the lady in a glass bell and give her as support a thin oak spray of dried leaves, and place the thing on a table in front of the open window. As they come in, the travellers can't fail to see the prisoner on their path. The dish with its layer of sand on which the lady has passed the night and morning under a wire net is in my way. I put it, without thinking, on the floor in a half-dark corner. It's about ten paces from the window.

"What happens upsets my ideas. Among the travellers, not one stops at the glass bell in which the lady is quite visible in the full daylight. Indifferently they pass her by, without a glance, without an enquiry. All of them fly over there, to the other end of the room into the obscure corner where I have put the dish and wire net . . . all afternoon till sunset they make love to the empty cage."

And the real lady sat by the window alone!

Fabre played her lovers tricks. He placed her on cotton-wool and when she had stood on it long enough, he put the cotton-wool by itself at

the bottom of a narrow-necked jar. And there they made love to the cotton-wool at the risk of their lives in a trap from which they could not escape. The slip of dried oak leaves he left upon a chair and upon it the butterflies congregated, pushing it to the floor and along the floor in their efforts to find the lady, who, all the while, sat alone in her glass dome as visible as glass could make her.

Then, because Geraldine could not stay there always, a hand on Fabre's little table, listening to strange stories of what an old man knew of the life stories of little beasts, the guide-girl opened the door and they went downstairs, knowing that they had reached an end—not *the* end.

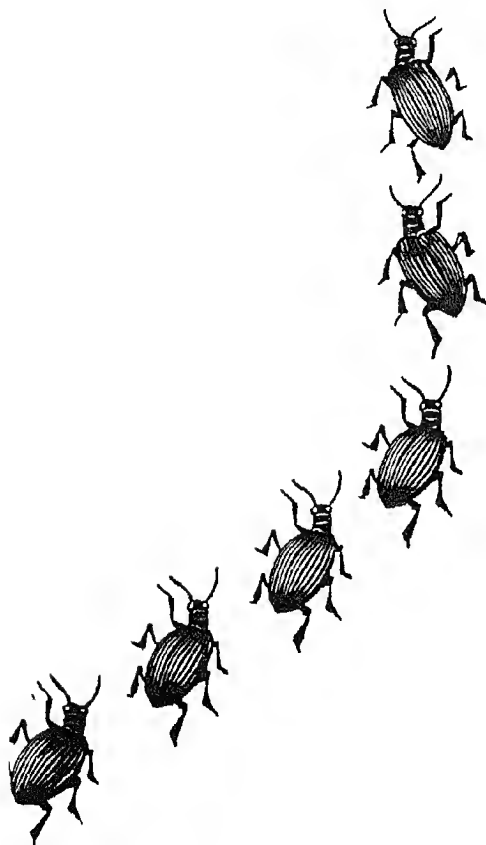
Their journey to the home of the Insect Man was done. They heard the guide-girl saying that he lived to be very old and died a very simple peasant man, just as he had lived, on October the 11th, 1915, at the age of ninety-two.

But Geraldine slipped a hand into Penelope's and looking up at her under the lilacs asked: "How many more of Fabre's stories have you to tell me before I have finished them all?"

And Penelope, who knew what kind of question to expect, said: according to my counting, two hundred and eighteen, and each one more interesting than the other and more strange. But if you want to know the Insect Man really, you must read his stories for yourself and, better still, read them in his lovely French.

"I knew," Geraldine said contentedly, as the door closed, shutting in Fabre's garden, "I knew that there is

NO END."



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3. Tale of Malaval, Fabre, *Souvenirs Entomologiques*, Series VI, Chapter III.
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7. Tale of the Rodez School, Fabre, *Souvenirs Entomologiques*, Series VI, p. 62
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15. Tale of the Scorpions, Fabre, *Souvenirs Entomologiques*, Series IX, Chapter XXI.
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24. Tale of the Pine Processionary, Fabre, *Souvenirs Entomologiques*, Series VI, p. 321 *et seq*
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